Shephard Wesnitzer, Inc.

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Engineering an environment of excellence

PRELIMINARY DRAINAGE REPORT for THE VILLAGE AT SADDLEROCK CROSSING

APNs: 408-26-004B, 408-26-004C, 408-26-009A, 408-26-009C, 408-26-010, 408-26-011, 408-26-012, 408-26-013, 408-26-014, 408-26-086A and 408-26-088
Sedona, Arizona

Prepared for:
Baney Corporation
475 NE Bellevue Dr. Suite 210
Bend, OR 97701

Job # 16034

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Grading and Utilities Concept Plan

Introduction

The proposed project site is located in Sedona, Arizona, south of State Route (SR)-89A, and between Saddlerock Circle and Elk Road. The project site is located on approximately 6.36 acres of vacant land, positioned in a portion of sections 12 & 13, Township 17 North, Range 5 East Gila and Salt River Meridian. A vicinity map is in the Appendix.

The proposed project consists of 4 hotel units, a lobby/restaurant building, 4 multifamily housing units, a parking structure, a parking lot, and the paving of a connector road from Saddlerock Circle to the intersection at Soldiers Pass Road and SR-89A. The proposed project is located on parcels 408-26-004B, 408-26-004C, 408-26-009A, 408-26-009C, 408-26-010, 408-26-011, 408-26-012, 408-26-013, 408-26-014, 408-26-086A and 408-26-088. The existing site has 70+ trees and shrubs, and one concrete driveway entrance along SR-89A on the north side of the site. An existing ditch on the west side of the property collects on-site and off-site runoff from the north, south, and east. The ditch has a 36" culvert which takes runoff west under Saddlerock Circle. Surrounding developments include the Saddlerock Homes subdivision to the west and south of the project site, commercial property to the west, north and east, and the Sedona Elks Lodge to the east.

The project is located in Zone X of the FEMA Flood Insurance Rate Map, map number 04025C1435G, effective September 3, 2010. Zone X is described as an area determined to be outside the 500-year floodplain. The preliminary FEMA Flood Insurance Rate Map number 04025C1435H, dated June 30, 2020, shows no changes to the flood hazard area designation for the site. The Appendix contains a portion of the FIRM near the project area.

The City of Sedona Flood Plain Management Study places part of the proposed project site within the 100-year floodplain boundary. This study also places the site in basin number 77, with a flow of 134 cfs for the 100-year storm event. The City of Sedona Storm Water Master Plan places the site in basin B77B, with a flow of 256 cfs for the 100-year event. Information from these studies can be found in the Appendix.

Objective

The objective of this report is to ascertain the impact the proposed development will have on the runoff characteristics of the site and to determine the detention volume needed to attenuate the additional post-development flows. The design of the proposed drainage control structures will be in accordance with City of Sedona and Yavapai County drainage criteria.

Procedure

The total project watershed is approximately 44.98 acres and is a mixture of developed residential housing, undeveloped native land, and previously graded vacant land. The project site slopes from east to west towards Saddlerock Circle, with an average slope of 5%. Off-site runoff from commercial property to the east drains west through the site. A catch basin on Saddlerock Circle collects runoff from SR-89A and flows through an 18" pipe to the ditch on the west side of the project site. Off-site flows from the neighborhood to the south of the site are routed through a network of ditches and culverts, which enters the ditch on the southwest corner of the site. Flow also enters the site from the cul-de-sac (end of Saddlerock Lane) and from the two properties to the east of Saddlerock Lane. When the pipe on Saddlerock Lane is full, runoff overtops the ditch on the east of Saddlerock Lane and enters the site at the cul-de-sac. On-site topographic survey was performed by Shephard Wesnitzer, Inc. in September 2018. Off-site topographic information was used from the 2007 City of Sedona Aerial Survey. The pre-development drainage map is provided in the Appendix.

The development of the project site includes the addition of approximately 3.66 acres of impervious surfaces. The resulting storm water runoff is proposed to be routed through a storm drain system from the east side of the project site across the proposed development to the west, where it then outlets into the existing 36" culvert under Saddlerock Circle. The proposed rainwater harvesting system, consisting of tanks collecting storm water from the hotel unit roofs, could potentially offset a portion of the direct storm runoff from the site, if approved. To mitigate increased peak flows from the development of the project site, an underground detention structure is proposed.

The design rainfall data was taken from the site specific NOAA Atlas 14 point precipitation frequency estimates table, as shown in the Appendix. The required storage volume of storm water runoff from the development of the site was determined based on retaining the storm runoff volume for the entire 100-year, 2-hour storm event from all added impervious areas of the project site, per the Yavapai County Drainage Manual.

Off-site flows from the northern portion of Saddlerock Circle and SR-89A will be collected through a catch basin and conveyed to the 36" culvert under Saddlerock Circle via a storm drain pipe. Off-site flows from the east along Elk Road will be collected through catch basins and directed under the proposed parking structure into the proposed storm drain system. Off-site flows from the south will also be conveyed to the proposed storm drain system through storm drain inlets. The development of the Village at Saddlerock Crossing project will not alter the existing off-site flowrate conditions with the proposed detention system.

Results

The underground detention structure is proposed to be located within the parking lot on the west side of the site, and will require approximately 36,200 ft.^{3} of volume to attenuate peak flows to pre-development rates. This volume can be attained through the placement of 1,280 ft. of 6' corrugated metal pipe beneath the parking lot. The first flush volume of approximately 6700 ft.^{3} will be retained below the basin outlet, with the excess storm water runoff being conveyed to the 36" culvert under Saddlerock Circle. Refer to the Grading and Utilities Concept Plan for preliminary details, grades, finished elevations, and locations.

Conclusion

A runoff volume for the 100-year, 2 hour storm event was calculated for the project watershed to determine a required detention volume of 36,200 ft^3. Runoff from the development of the site, along with the off-site flows to the west, east, and south will be conveyed into the proposed underground detention basin through a storm drain system. The underground detention structure will discharge to the west through the existing 36" culvert underneath Saddlerock Circle.

The design concepts in this report will ensure that the drainage integrity of the site is sustained with proper maintenance activity. Activities include frequent clearing of debris and sediment from the storm drain inlets and detention areas, disturbed slope treatment and erosion control. Frequent monitoring will ensure expedient remedies to common problems such as erosion, sedimentation, and flow obstructions.

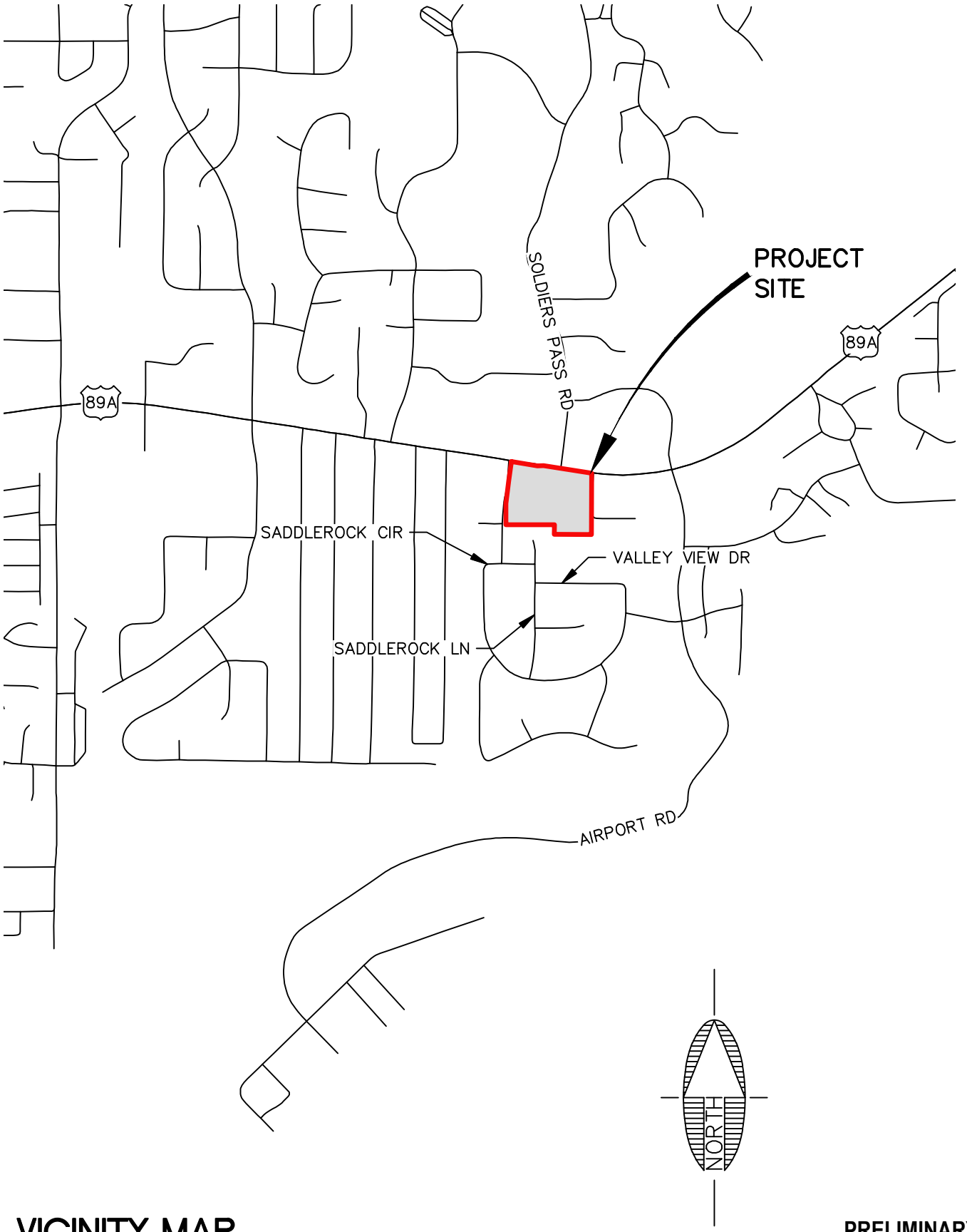
References

City of Sedona Flood Plain Management Study, City of Sedona, 1994

City of Sedona Storm Water Master Plan, City of Sedona, 2005

Yavapai County Drainage Design Manual, Yavapai County Flood Control District, 2015

APPENDIX



VICINITY MAP

NO SCALE

PRELIMINARY

NOT FOR CONSTRUCTION, BIDDING OR RECORDING

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JOB NO.	16034
DATE	APR 21
SCALE	NO SCALE
DRAWN	EGM
DESIGN	JTL
CHECKED	JTL

THE VILLAGE AT SADDLEROCK CROSSING — SEDONA ARIZONA

VICINITY MAP

SHEET 1 OF 1

National Flood Hazard Layer FIRMette

FEMA

0 250 500 1,000 1,500 2,000 Feet

1:6,000

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 / 17.5 Cross Sections with 1% Annual Chance / Water Surface Elevation
- Coastal Transect
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

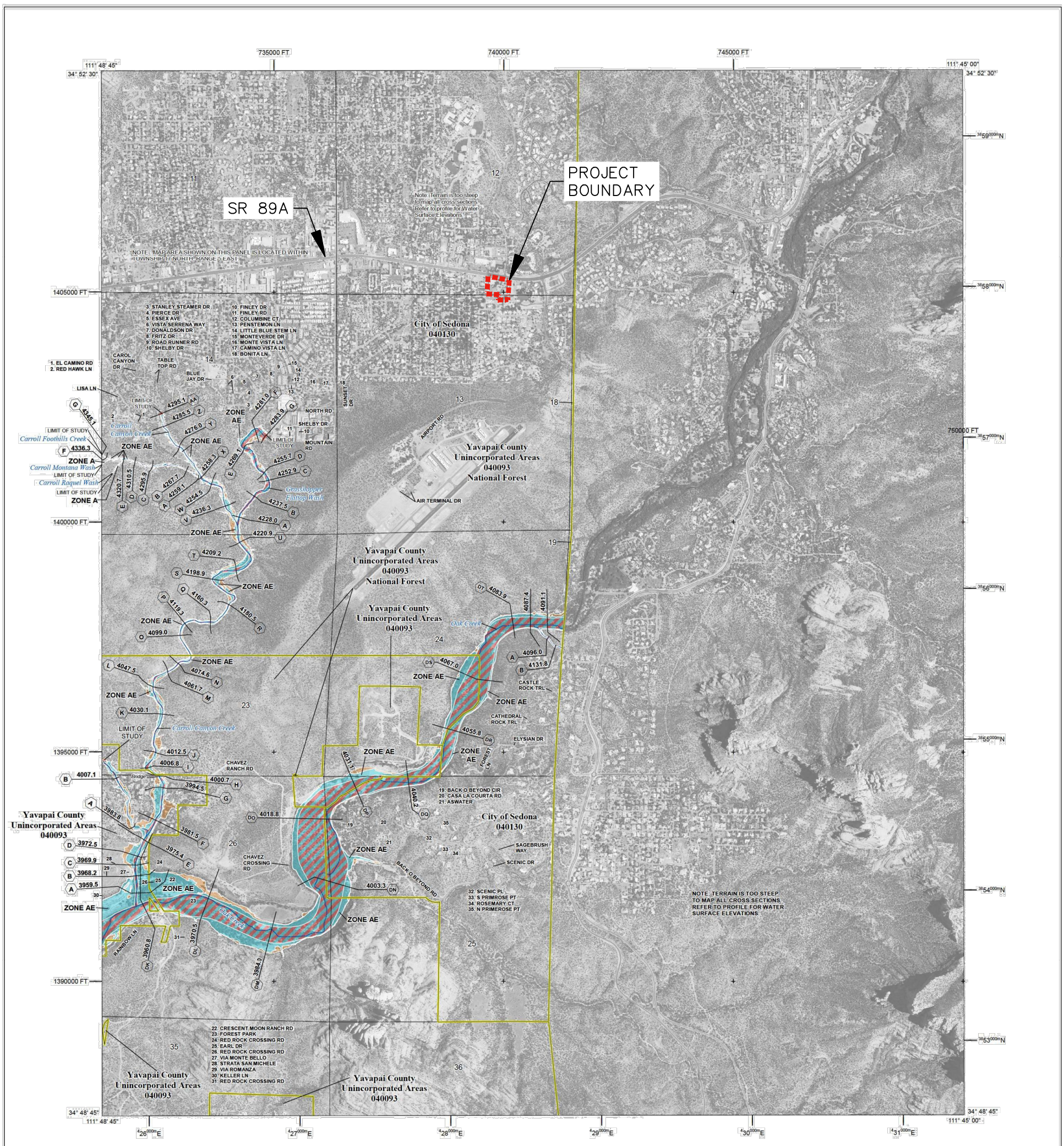
N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 10/26/2018 at 4:25:24 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.



FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

THE INFORMATION DEPICTED ON THIS MAP AND SUPPORTING DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT

HTTPS://MSC.FEMA.GOV

SPECIAL FLOOD HAZARD AREAS

- Without Base Flood Elevation (BFE) *Zone A,V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD

- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS

- NO SCREEN — Areas of Minimal Flood Hazard *Zone X*
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES

- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES

- 18.2 / 17.5 — Cross Sections with 1% Annual Chance / Water Surface Elevation
- Coastal Transect
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature
- 513 — Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary

NOTES TO USERS

For information and questions about this Flood Insurance Rate Map (FIRM), available products associated with this FIRM, including historic versions, the current map date for each FIRM panel, how to order products, or the National Flood Insurance Program (NFIP) in general, please call the FEMA Map Information eXchange at 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA Flood Map Service Center website at https://msc.fema.gov. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the website.

Communities annexing land on adjacent FIRM panels must obtain a current copy of the adjacent panel as well as the current FIRM Index. These may be ordered directly from the Flood Map Service Center at the number listed above.

For community and countywide map dates, refer to the Flood Insurance Study Report for this jurisdiction.

To determine if flood insurance is available in this community, contact your Insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

Base map information shown on this FIRM was provided in digital format by the United States Geological Survey (USGS). This information was derived from digital orthophotography at a 2-foot resolution from photography dated 2011.

SCALE

Map Projection:
NAD 1983 StatePlane Arizona Central FIPS 0202 Feet;
Western Hemisphere; Vertical Datum: NAVD 88

1 inch = 1,000 feet 1:12,000

0 1,000 2,000 4,000 Feet

0 250 500 1,000 Meters

PANEL LOCATOR

FEMA National Flood Insurance Program

NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP

YAVAPAI COUNTY, ARIZONA
and Incorporated Areas

PANEL 1795 OF 3900

Panel Contains:

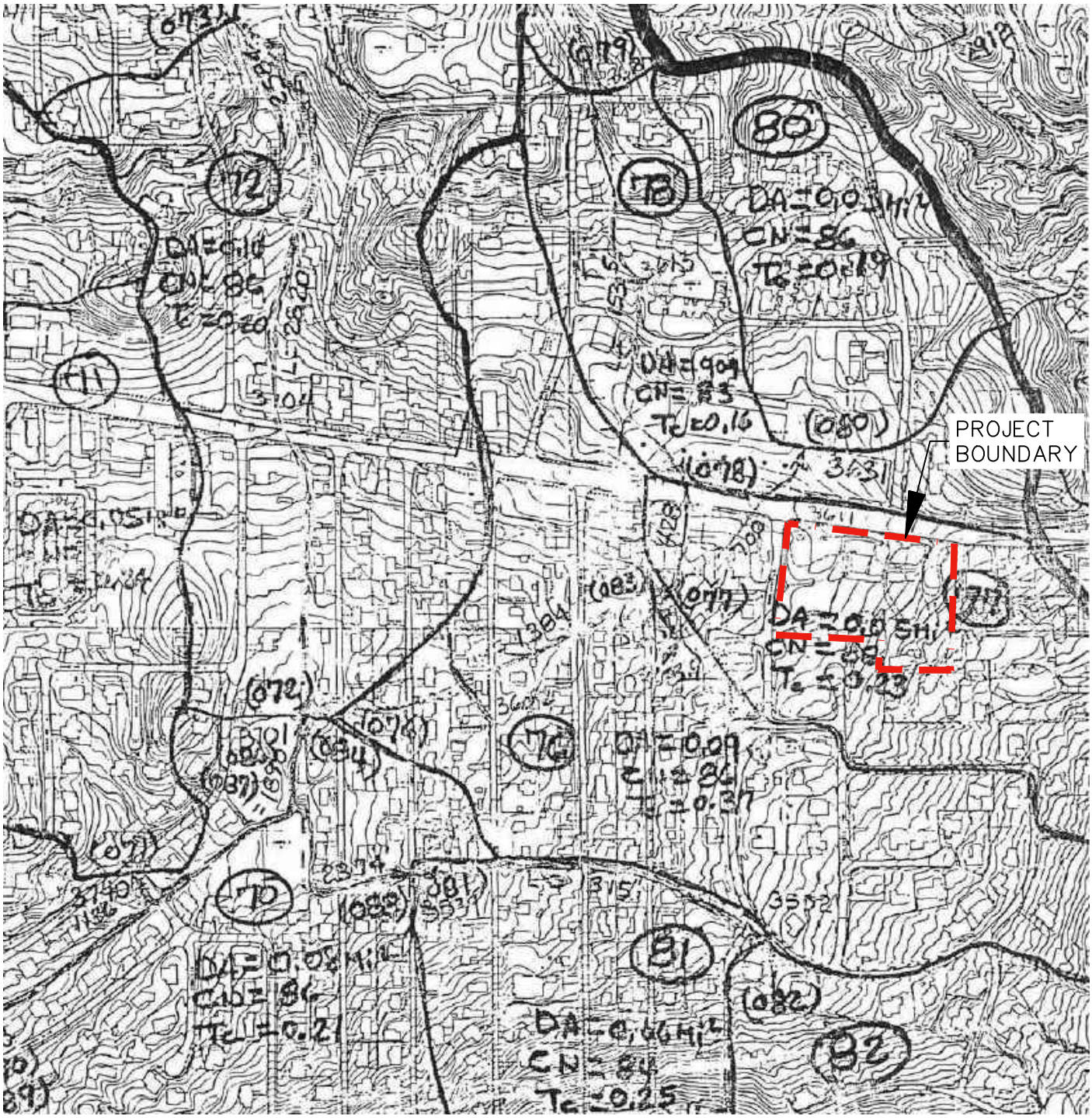
COMMUNITY	NUMBER	PANEL	SUFFIX
YAVAPAI COUNTY	040093	1795	I

PRELIMINARY
6/30/2020

VERSION NUMBER
2.4.3.5

MAP NUMBER
04025C1435H

MAP REVISED

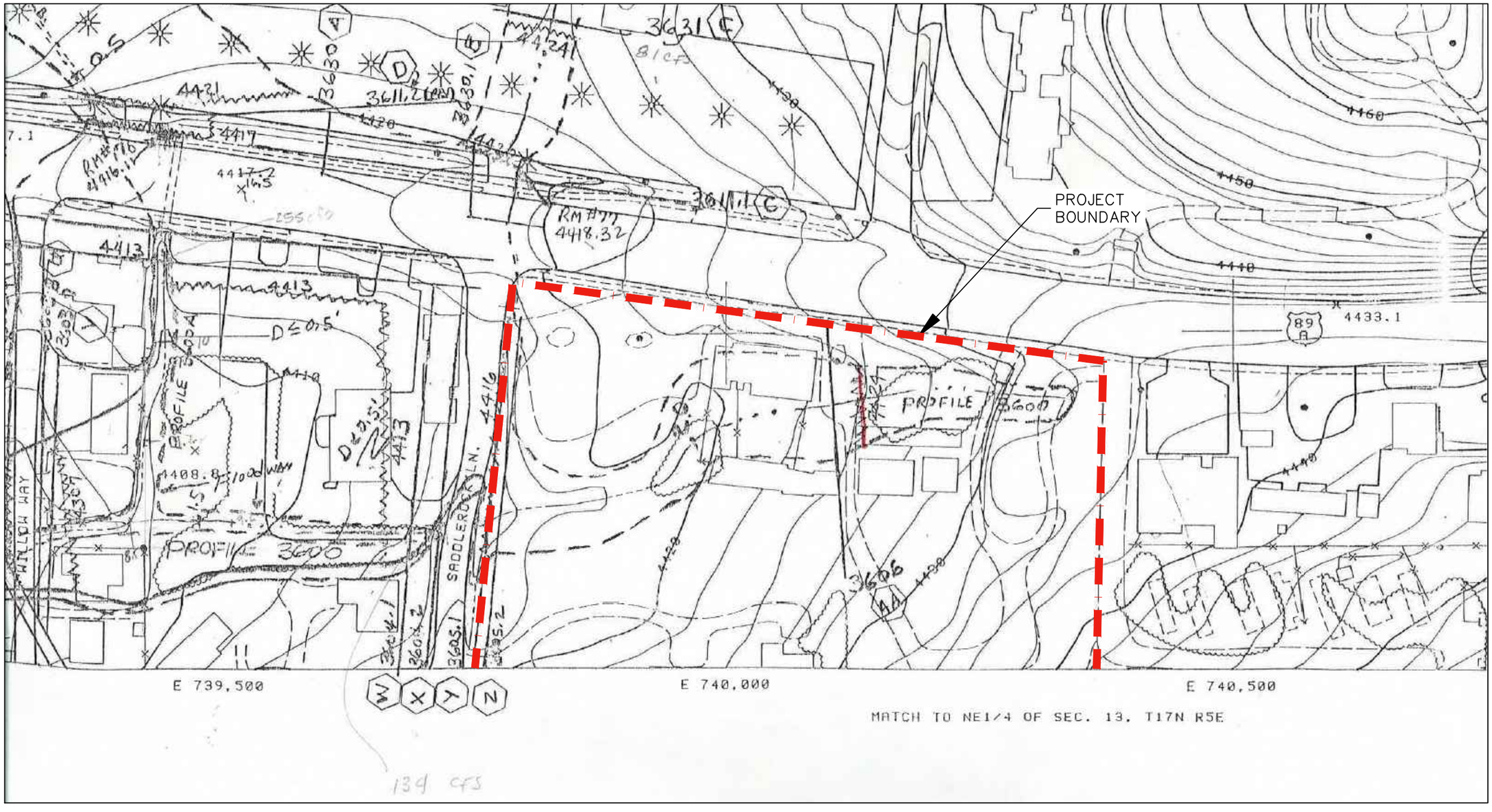


CITY OF SEDONA

FLOODPLAIN MANAGEMENT STUDY, 1994

NO SCALE

PORTION OF OVERALL DRAINAGE BASIN MAP

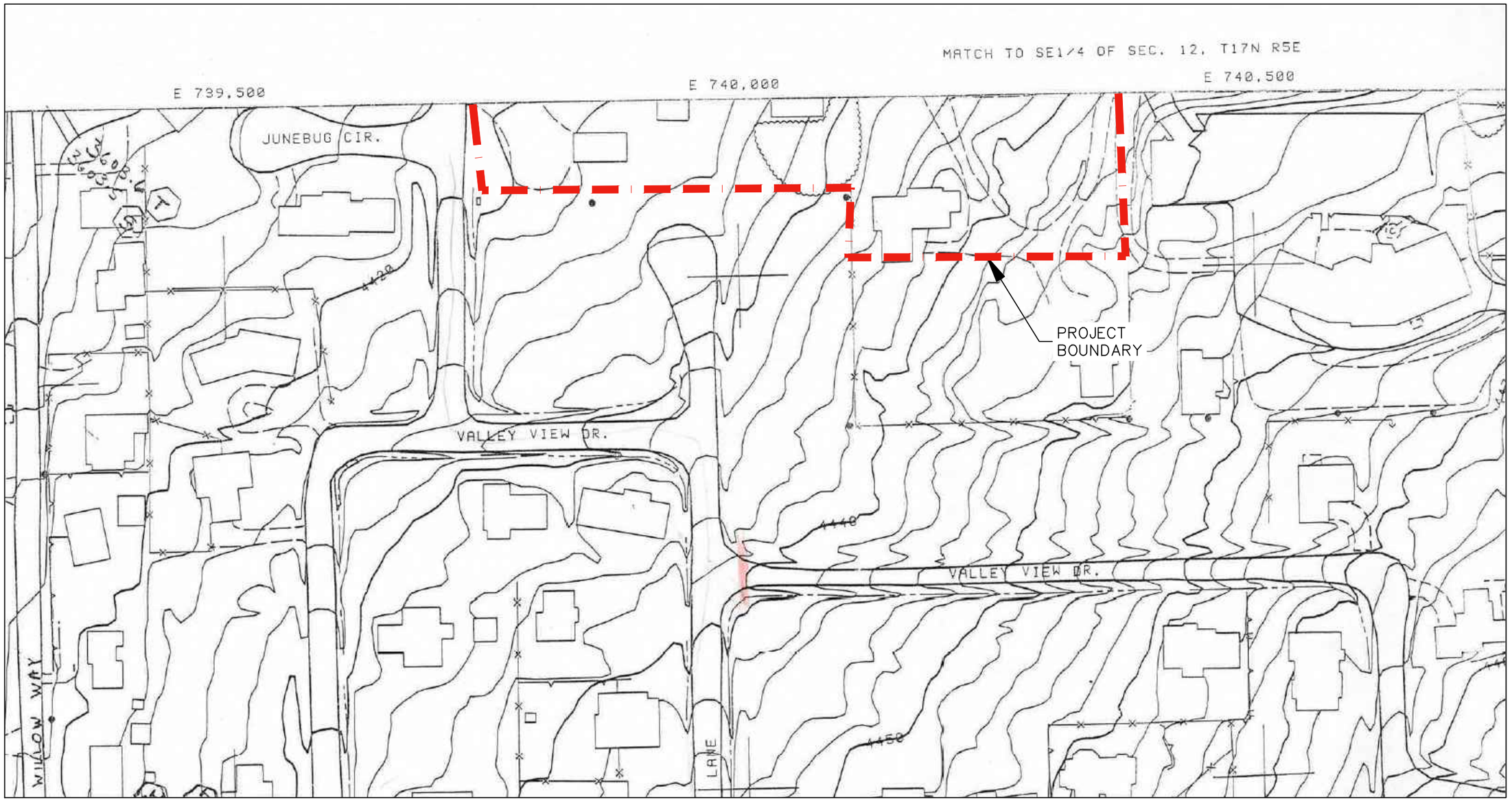


CITY OF SEDONA

FLOODPLAIN MANAGEMENT STUDY, 1994

PORTION OF SE QUARTER SECTION 12 MAP

NO SCALE



CITY OF SEDONA

FLOODPLAIN MANAGEMENT STUDY, 1994

PORTION OF NE QUARTER SECTION 13 MAP

NO SCALE

SDHEC236.DAT - Notepad

File Edit Format View Help

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GR4401.6   153.0  4401.6   158.3  4405.0   164.0  4406.0   210.0  4408.0   290.0
GR4410.0   350.0

NH     3   0.075   150.0   0.035   164.0  .0.075   350.0
X13603.9      11     150     164      10      10      10
GR4410.0     0.0  4408.0    30.0  4406.3    80.0  4406.0   120.0  4405.0   150.0
GR4401.6   154.0  4401.6   157.0  4405.0   164.0  4406.0   210.0  4408.0   290.0
GR4410.0   350.0

NC                          0.1     0.3
QT    7.      7.     23.     39.     71.    101.    134.    198.
NH     3    .075   120.0    .035   134.0    .075   380.0
X13604.1       9   120.0   134.0     355     385     366          -0.5
GR4418.0     0.0  4416.0   120.0  4411.4   126.0  4411.4   129.0  4416.0   134.0
GR4415.0   230.0  4415.0   330.0  4416.0   350.0  4418.0   380.0

* CROSS SECTION 3604.2 AT DOWNSTREAM CULVERT FACE- FLOW LIMITED TO CULVERT WIDTH
NC                          0.3     0.5
NH     3    .075   120.0    .035   134.0    .075   380.0
X13604.2       9   126.0   129.0      20      20      20
X3    10                                          4414.2  4414.2
GR4418.0     0.0  4416.0   120.0  4411.4   126.0  4411.4   129.0  4416.0   134.0
GR4415.0   230.0  4415.0   330.0  4416.0   350.0  4418.0   380.0
SC 1.024    0.50     2.8             3.0             50.     2.1  4412.4  4411.4

* CROSS SECTION 3605.1 AT UPSTREAM CULVERT FACE - FLOW LIMITED TO CULVERT WIDTH
NH     3   0.075    115.   0.035    126.   0.075    360.
X13605.1       8    119.    122.     50.     50.     50.
X2                    2         4415.2
X3    10                                          4415.2  4415.2
BT    -8  1000.9  4417.0         1038.3  4416.5          1072.5  4415.7
BT        1110.8  4415.2         1145.9  4415.2          1186.2  4415.5
BT        1223.3  4415.7         1242.6  4416.1
GR4418.0     0.0  4416.0    70.0  4415.7   115.0  4412.4   119.0  4412.4   122.0
GR4415.5   126.0  4416.0   320.0  4418.0   360.0

NH     3   0.075    115.   0.035    126.   0.075    360.
X13605.2       8    115.    126.     10.     10.     10.
GR4418.0     0.0  4416.0    70.0  4415.7   115.0  4412.4   119.0  4412.4   122.0
GR4415.5   126.0  4416.0   320.0  4418.0   360.0

NC                          0.1     0.3
NH     1   0.055  1261.8
X13606.0       8  1184.6  1220.4     345     315     352
GR4426.6  1000.0  4424.6  1061.0  4423.8  1103.7  4423.2  1141.5  4422.7  1184.6
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EJ
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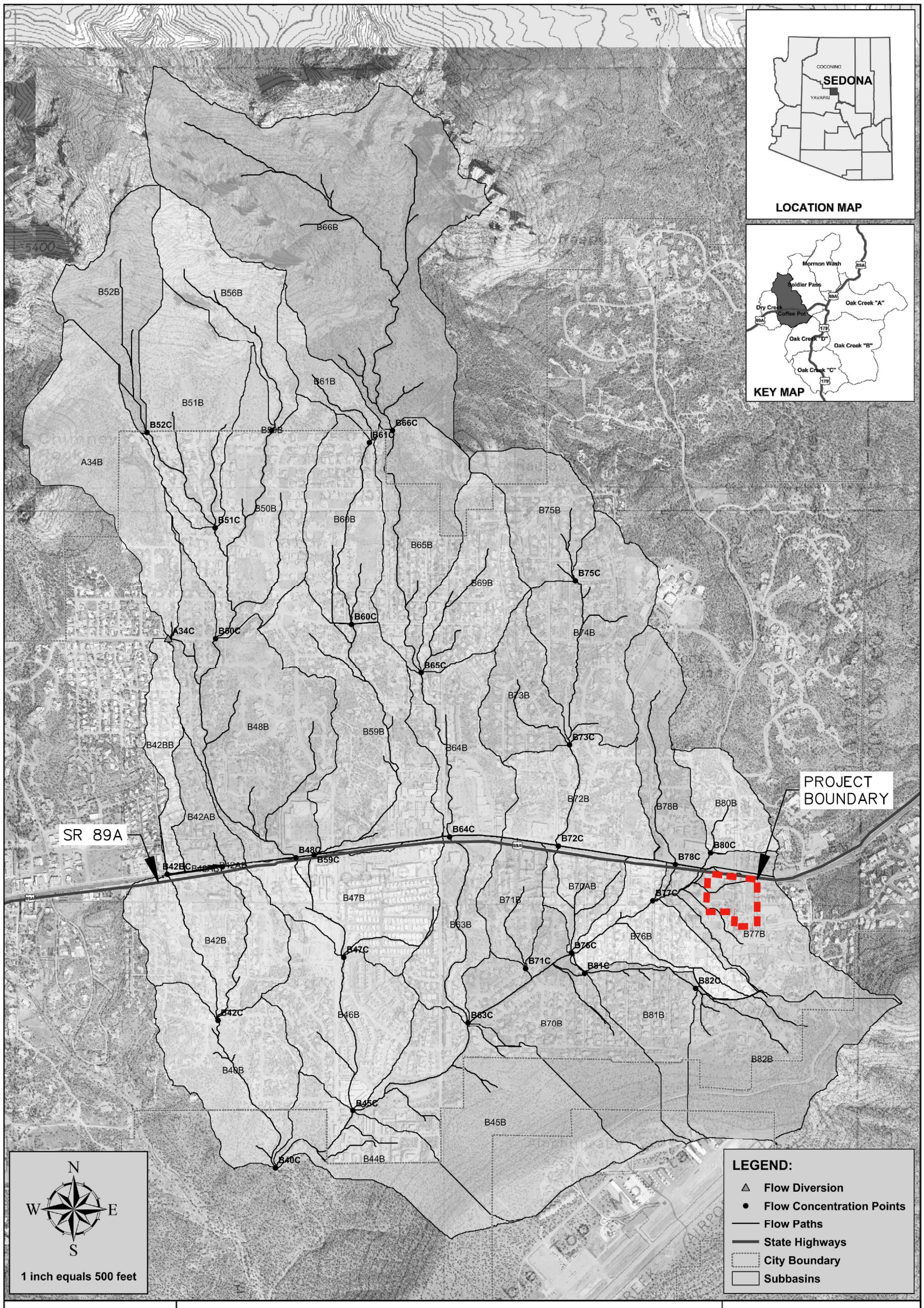


PREPARED FOR:

CITY OF SEDONA

COFFEE POT DRAINAGE MAP
EXHIBIT NO. 2

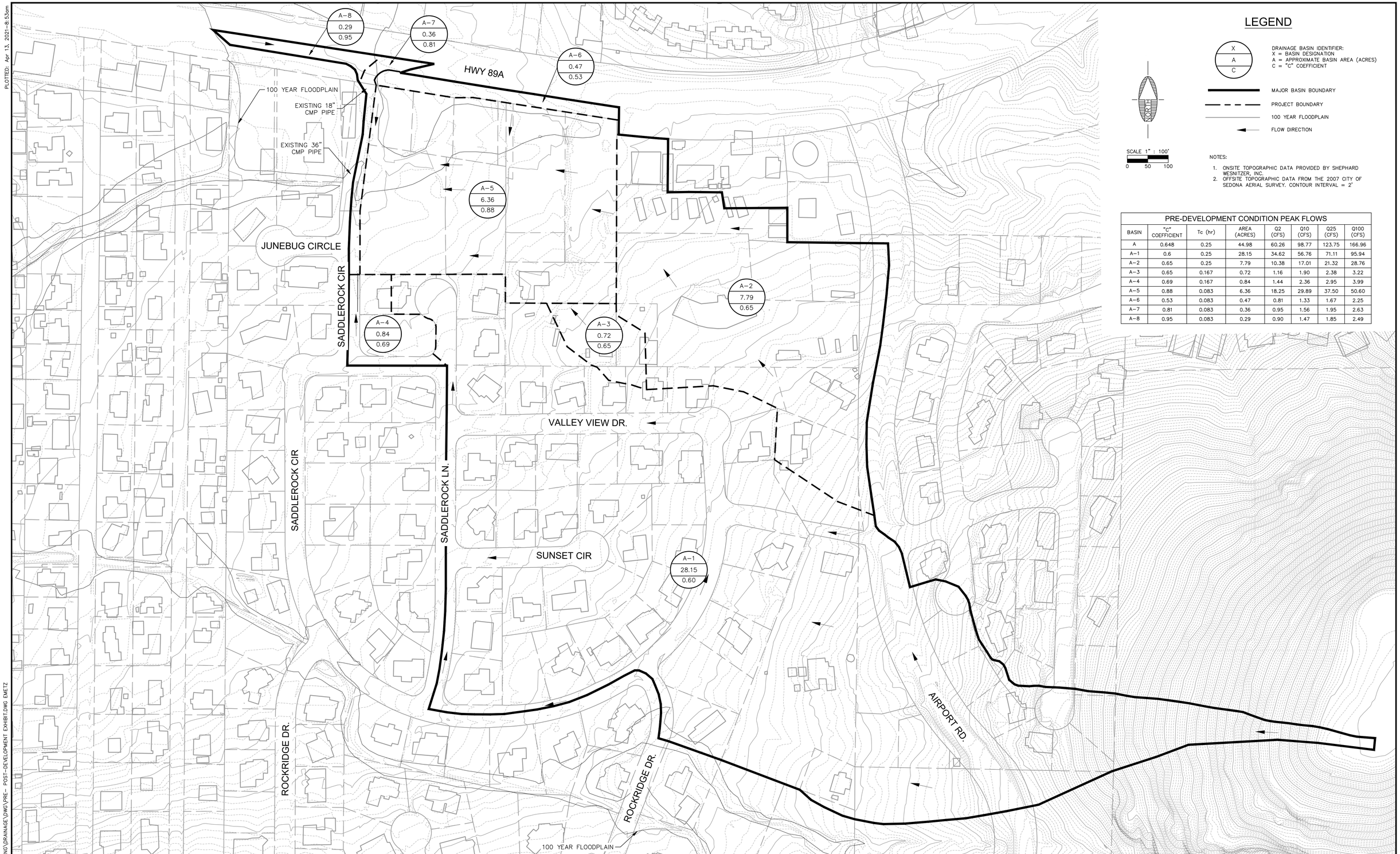
MAP SCALE: 0 0.05 0.1 0.2 0.3 0.4 0.5 Miles

CITY OF SEDONA STORM WATER MASTER PLAN

PREPARED BY:

DIBBLE & ASSOCIATES
CONSULTING ENGINEERS
Since 1962

DATE: SEPTEMBER 22, 2004



LEGEND

- X / A / C — DRAINAGE BASIN IDENTIFIER:
  X = BASIN DESIGNATION
  A = APPROXIMATE BASIN AREA (ACRES)
  C = "C" COEFFICIENT
- MAJOR BASIN BOUNDARY
- PROJECT BOUNDARY
- 100 YEAR FLOODPLAIN
- FLOW DIRECTION

SCALE 1" : 100'
0 50 100

NOTES:

1. ONSITE TOPOGRAPHIC DATA PROVIDED BY SHEPHARD WESNITZER, INC.
2. OFFSITE TOPOGRAPHIC DATA FROM THE 2007 CITY OF SEDONA AERIAL SURVEY. CONTOUR INTERVAL = 2'

PRE-DEVELOPMENT CONDITION PEAK FLOWS

BASIN	"C" COEFFICIENT	Tc (hr)	AREA (ACRES)	Q2 (CFS)	Q10 (CFS)	Q25 (CFS)	Q100 (CFS)
A	0.648	0.25	44.98	60.26	98.77	123.75	166.96
A–1	0.6	0.25	28.15	34.62	56.76	71.11	95.94
A–2	0.65	0.25	7.79	10.38	17.01	21.32	28.76
A–3	0.65	0.167	0.72	1.16	1.90	2.38	3.22
A–4	0.69	0.167	0.84	1.44	2.36	2.95	3.99
A–5	0.88	0.083	6.36	18.25	29.89	37.50	50.60
A–6	0.53	0.083	0.47	0.81	1.33	1.67	2.25
A–7	0.81	0.083	0.36	0.95	1.56	1.95	2.63
A–8	0.95	0.083	0.29	0.90	1.47	1.85	2.49

REVISIONS			
NO.	DESCRIPTION	DATE	BY

SWI
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Sedona, AZ 86336
928.282.1061
928.282.2058 fax
www.swiaz.com

JOB NO:	16034
DATE:	APR 21
SCALE:	1"=100
DRAWN:	AKC/EGM
DESIGN:	AKC
CHECKED:	AHB

THE VILLAGE AT SADDLEROCK CROSSING — SEDONA ARIZONA

PRELIMINARY DRAINAGE REPORT DRAINAGE MAP PRE-DEVELOPMENT

PRELIMINARY
NOT FOR CONSTRUCTION, BIDDING OR RECORDING

DRAWING NO. D1
SHT NO. 1 OF 1

NOAA Atlas 14, Volume 1, Version 5
Location name: Sedona, Arizona, USA*
Latitude: 34.8621°, Longitude: -111.7837°
Elevation: 4438.28 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	**0.211** (0.176-0.252)	**0.272** (0.227-0.325)	**0.366** (0.304-0.437)	**0.445** (0.371-0.530)	**0.558** (0.461-0.661)	**0.652** (0.534-0.773)	**0.753** (0.612-0.894)	**0.862** (0.691-1.03)	**1.02** (0.804-1.22)	**1.16** (0.897-1.39)
10-min	**0.321** (0.269-0.383)	**0.414** (0.345-0.494)	**0.557** (0.463-0.665)	**0.678** (0.564-0.807)	**0.849** (0.701-1.01)	**0.992** (0.813-1.18)	**1.15** (0.932-1.36)	**1.31** (1.05-1.56)	**1.56** (1.22-1.86)	**1.76** (1.37-2.12)
15-min	**0.398** (0.333-0.475)	**0.513** (0.428-0.612)	**0.691** (0.574-0.824)	**0.840** (0.699-1.00)	**1.05** (0.869-1.25)	**1.23** (1.01-1.46)	**1.42** (1.16-1.69)	**1.63** (1.30-1.94)	**1.93** (1.52-2.31)	**2.18** (1.69-2.63)
30-min	**0.537** (0.448-0.639)	**0.691** (0.575-0.824)	**0.930** (0.773-1.11)	**1.13** (0.942-1.35)	**1.42** (1.17-1.68)	**1.66** (1.36-1.96)	**1.91** (1.56-2.27)	**2.19** (1.76-2.61)	**2.60** (2.04-3.11)	**2.94** (2.28-3.54)
60-min	**0.664** (0.554-0.791)	**0.855** (0.712-1.02)	**1.15** (0.957-1.37)	**1.40** (1.17-1.67)	**1.75** (1.45-2.08)	**2.05** (1.68-2.43)	**2.37** (1.93-2.81)	**2.71** (2.17-3.23)	**3.21** (2.53-3.85)	**3.63** (2.82-4.38)
2-hr	**0.782** (0.680-0.910)	**0.990** (0.853-1.16)	**1.31** (1.13-1.52)	**1.58** (1.35-1.83)	**1.96** (1.67-2.27)	**2.28** (1.92-2.65)	**2.63** (2.19-3.07)	**3.02** (2.47-3.51)	**3.58** (2.88-4.17)	**4.04** (3.20-4.72)
3-hr	**0.840** (0.738-0.972)	**1.06** (0.937-1.23)	**1.36** (1.19-1.57)	**1.62** (1.41-1.87)	**1.99** (1.72-2.30)	**2.31** (1.98-2.66)	**2.66** (2.25-3.08)	**3.05** (2.54-3.52)	**3.61** (2.96-4.20)	**4.07** (3.27-4.77)
6-hr	**1.02** (0.913-1.13)	**1.27** (1.14-1.41)	**1.57** (1.41-1.75)	**1.85** (1.65-2.05)	**2.24** (1.98-2.49)	**2.55** (2.24-2.84)	**2.90** (2.52-3.23)	**3.26** (2.80-3.65)	**3.80** (3.21-4.29)	**4.24** (3.52-4.82)
12-hr	**1.31** (1.18-1.45)	**1.62** (1.47-1.80)	**1.98** (1.78-2.19)	**2.28** (2.04-2.51)	**2.68** (2.40-2.96)	**3.00** (2.67-3.30)	**3.33** (2.93-3.68)	**3.66** (3.19-4.05)	**4.13** (3.55-4.60)	**4.51** (3.84-5.05)
24-hr	**1.65** (1.50-1.81)	**2.05** (1.87-2.27)	**2.55** (2.32-2.82)	**2.96** (2.68-3.27)	**3.52** (3.17-3.88)	**3.96** (3.56-4.36)	**4.41** (3.94-4.87)	**4.88** (4.34-5.39)	**5.51** (4.86-6.12)	**6.01** (5.25-6.70)
2-day	**1.92** (1.75-2.12)	**2.39** (2.17-2.64)	**2.97** (2.71-3.28)	**3.44** (3.12-3.79)	**4.08** (3.70-4.50)	**4.59** (4.14-5.05)	**5.12** (4.59-5.63)	**5.66** (5.04-6.25)	**6.41** (5.64-7.09)	**6.98** (6.10-7.75)
3-day	**2.06** (1.88-2.27)	**2.57** (2.34-2.83)	**3.20** (2.92-3.53)	**3.72** (3.38-4.09)	**4.44** (4.02-4.88)	**5.01** (4.51-5.50)	**5.60** (5.02-6.15)	**6.22** (5.53-6.85)	**7.07** (6.23-7.81)	**7.74** (6.77-8.59)
4-day	**2.21** (2.02-2.42)	**2.75** (2.51-3.03)	**3.44** (3.14-3.78)	**4.00** (3.64-4.40)	**4.79** (4.35-5.25)	**5.42** (4.89-5.94)	**6.09** (5.46-6.68)	**6.77** (6.03-7.44)	**7.74** (6.82-8.54)	**8.50** (7.43-9.43)
7-day	**2.59** (2.37-2.83)	**3.22** (2.95-3.53)	**3.99** (3.65-4.36)	**4.62** (4.23-5.06)	**5.50** (5.02-6.02)	**6.20** (5.64-6.79)	**6.93** (6.27-7.60)	**7.69** (6.91-8.43)	**8.73** (7.77-9.62)	**9.55** (8.42-10.5)
10-day	**2.95** (2.70-3.23)	**3.66** (3.35-4.02)	**4.51** (4.13-4.94)	**5.18** (4.74-5.68)	**6.09** (5.54-6.65)	**6.79** (6.16-7.43)	**7.50** (6.76-8.22)	**8.21** (7.37-9.01)	**9.17** (8.17-10.1)	**9.90** (8.77-10.9)
20-day	**3.81** (3.50-4.16)	**4.72** (4.34-5.16)	**5.72** (5.27-6.26)	**6.48** (5.95-7.07)	**7.45** (6.83-8.13)	**8.17** (7.46-8.91)	**8.87** (8.08-9.69)	**9.54** (8.66-10.4)	**10.4** (9.38-11.4)	**11.0** (9.89-12.1)
30-day	**4.58** (4.20-5.00)	**5.68** (5.21-6.19)	**6.85** (6.27-7.47)	**7.74** (7.08-8.42)	**8.87** (8.09-9.64)	**9.68** (8.81-10.5)	**10.5** (9.49-11.4)	**11.2** (10.1-12.3)	**12.2** (11.0-13.3)	**12.8** (11.5-14.1)
45-day	**5.41** (4.94-5.97)	**6.72** (6.13-7.41)	**8.12** (7.41-8.94)	**9.19** (8.38-10.1)	**10.6** (9.62-11.6)	**11.6** (10.5-12.7)	**12.6** (11.4-13.8)	**13.5** (12.2-14.9)	**14.7** (13.2-16.2)	**15.6** (13.9-17.2)
60-day	**6.31** (5.75-6.91)	**7.82** (7.14-8.57)	**9.40** (8.57-10.3)	**10.6** (9.62-11.6)	**12.0** (10.9-13.2)	**13.1** (11.9-14.3)	**14.1** (12.7-15.4)	**15.0** (13.6-16.5)	**16.2** (14.5-17.7)	**17.0** (15.2-18.7)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

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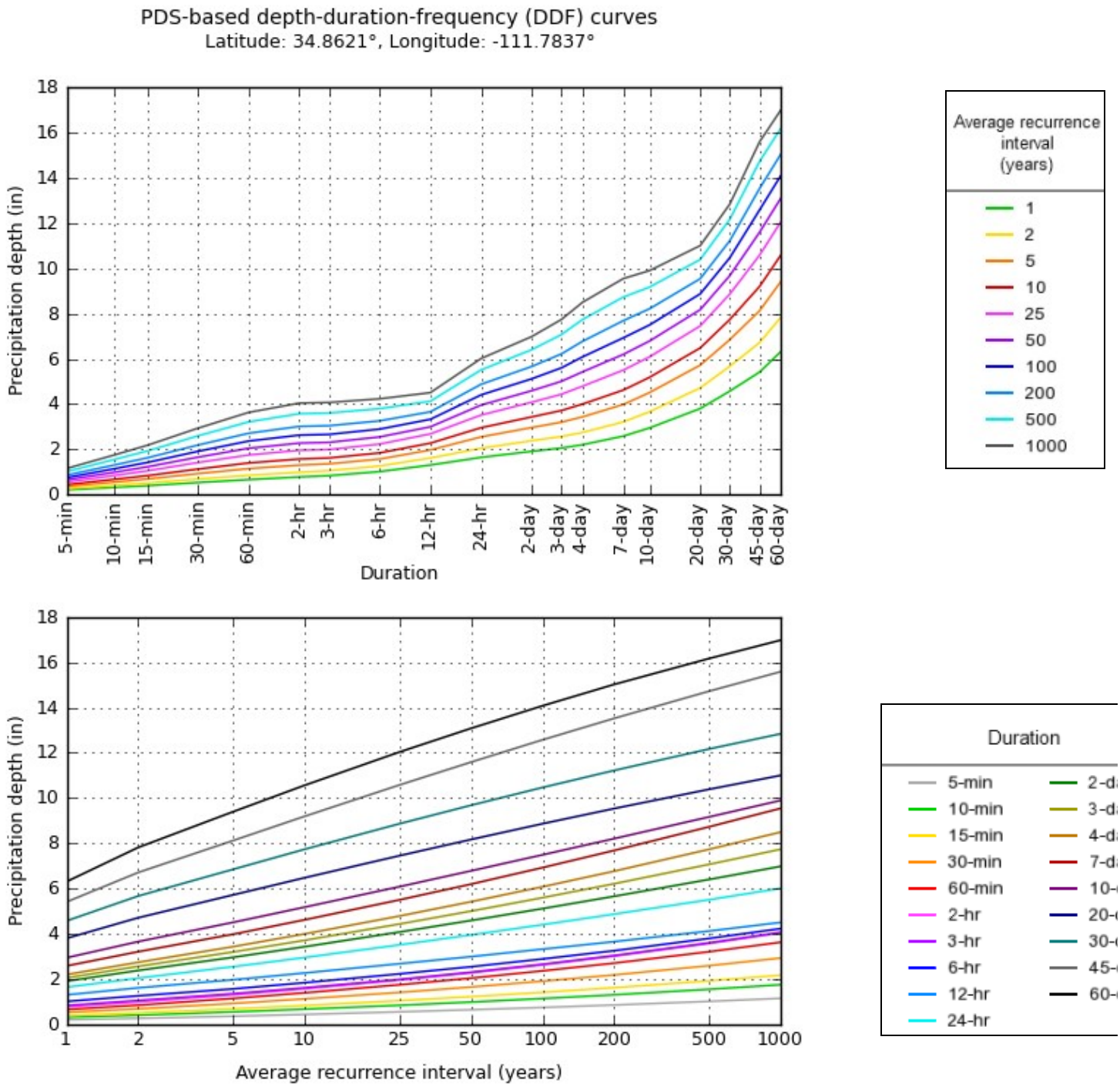
PF graphical



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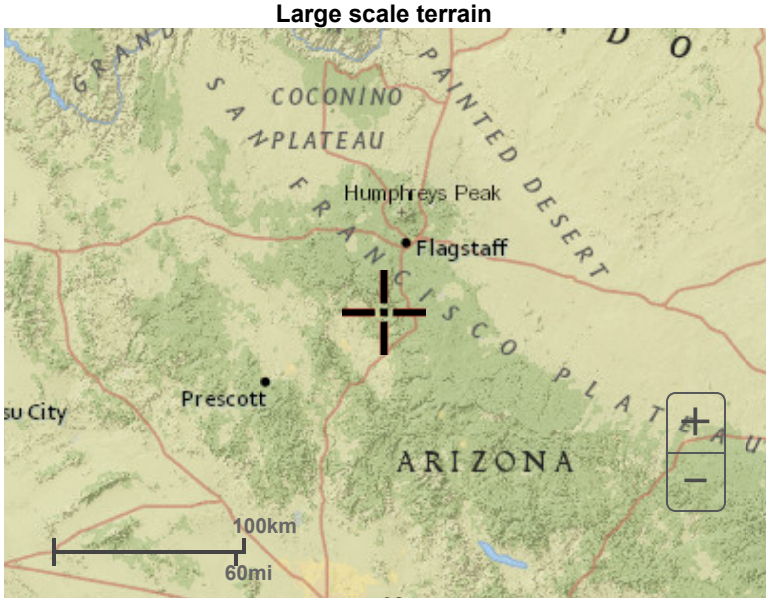
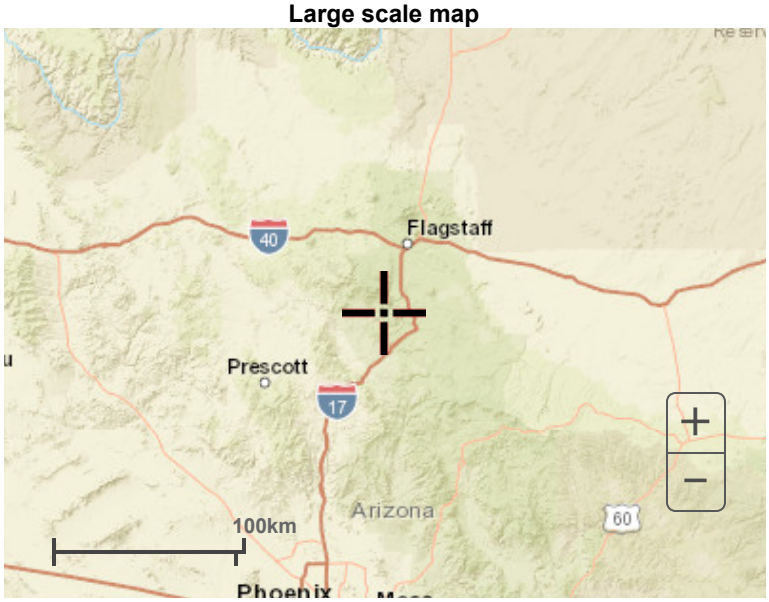
Maps & aerials

Small scale terrain

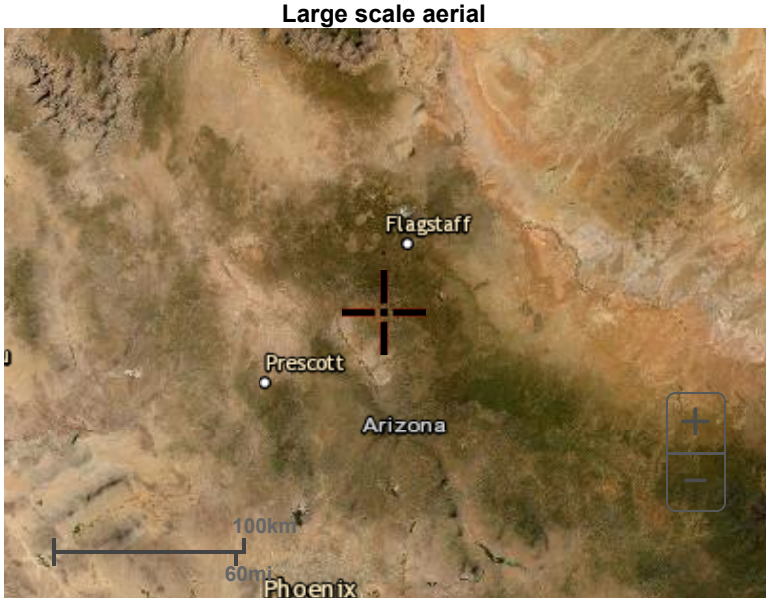
Large scale terrain



Large scale map



Large scale aerial



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US Department of Commerce
National Oceanic and Atmospheric Administration
National Weather Service
National Water Center
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

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PLOTTED: Apr 14, 2021 - 3:54pm

FILE: P:\2016\16034\DRAWINGS\SITE PLANS\GRADING DRAINAGE & UTILITY CONCEPT - 16034.DWG EMETZ

Contact Arizona 811 at least two full working days before you begin excavation

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928.282.1061
928.282.2058 fax

www.swiaz.com

JOB NO:	16034
DATE:	APR 21
SCALE:	1"=30'
DRAWN:	MWJ/ADA
DESIGN:	JTL
CHECKED:	JTL

THE VILLAGE AT SADDLEROCK CROSSING

SEDONA ARIZONA

GRADING, DRAINAGE, & UTILITY CONCEPT

PRELIMINARY

NOT FOR CONSTRUCTION, BIDDING OR RECORDING

DRAWING NO. GC1

SHT NO. 1 OF 1

SOUTHWEST TRAFFIC ENGINEERING, LLC

PARKING ANALYSIS

SADDLE ROCK CROSSING

SOLDIERS PASS ROAD/STATE ROUTE 89A (SR 89A)

25 MAY 2021

PREPARED FOR

BANEY CORPORATION
475 NE BELLEVUE DRIVE, SUITE S210
BEND, OREGON 97701

SOUTHWEST TRAFFIC ENGINEERING, LLC
3838 NORTH CENTRAL AVENUE, SUITE 1810
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Prepared By;
Andrew Smigielski, PE, PTOE, PTP
Parker Murphy, EIT

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SADDLE ROCK CROSSING
SOLDIERS PASS ROAD/SR 89A
PARKING ANALYSIS

Project Description

The Baney Corporation is proposing to develop the property immediately south of the intersection of Soldiers Pass Road/State Route 89A (SR 89A) in Sedona, Arizona. The vicinity of the project is shown in **Figure 1**. The site will be located as shown in **Figure 2**. The site proposes the construction of 40-units of multifamily housing; a 122-room hotel, eight (8) of which are suite accommodation only; a 985 square foot public, rooftop bar; and a 3,000 square foot high-turnover sit-down restaurant. The purpose of this parking analysis is to determine the parking needs/requirements of the fully completed development.

The author of this report is a registered Professional Engineer (Civil) in the State of Arizona having specific expertise and experience in the preparation of parking analyses.

Study Methodology

In order to analyze and evaluate the parking requirements for the project:

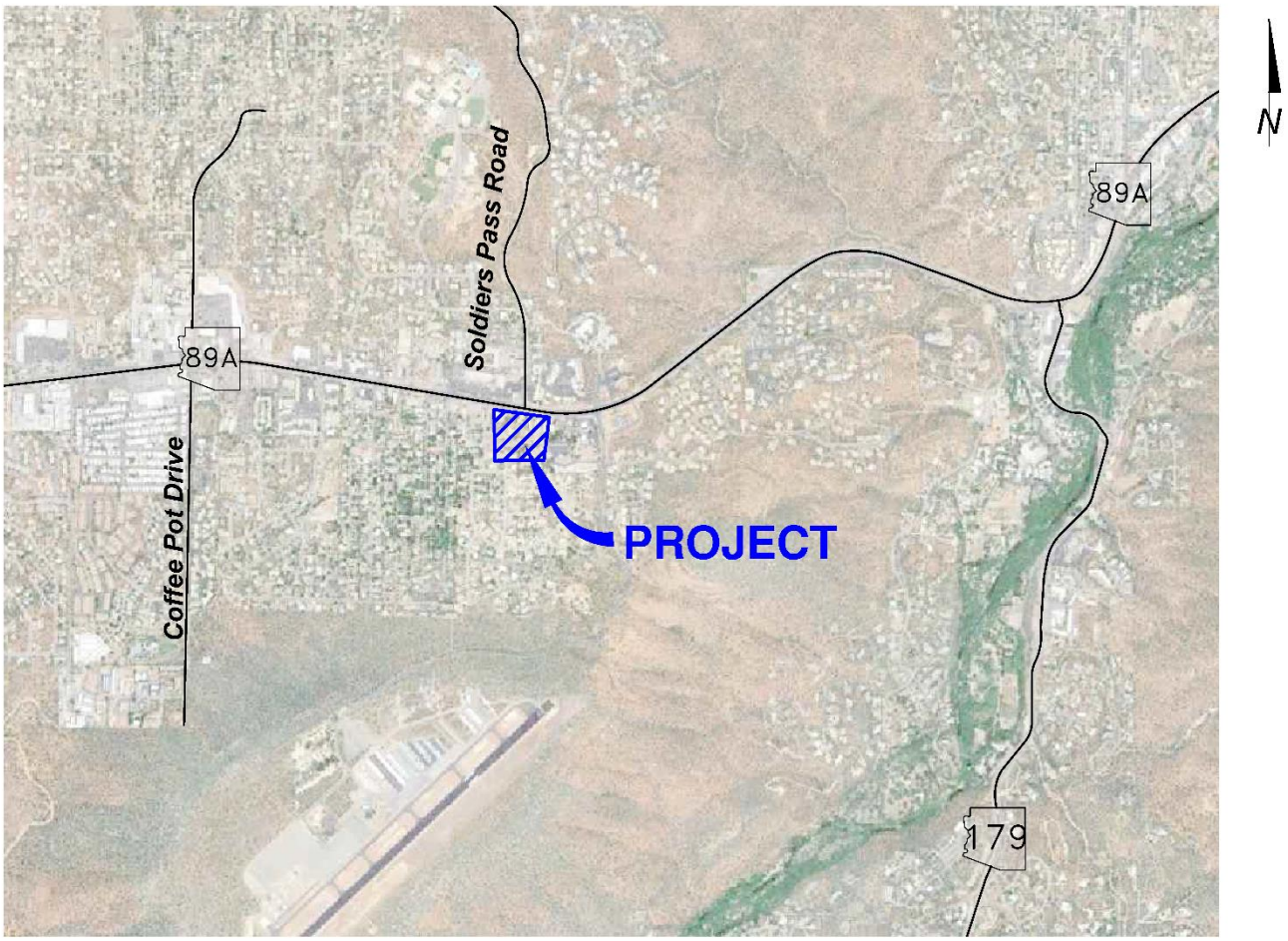
- A review of the site plan was performed to determine the various types of existing/proposed land uses and to define distinct parking zones within the site.
- The various land uses and associated building sizes were determined for each parking zone as well as the proposed number of parking spaces for each parking zone.
- A review of City of Sedona and Institute of Transportation Engineers (ITE) parking requirements was performed to determine the parking ratios for each proposed land use.
- The required number of parking spaces was determined for each land use.
- A shared parking (interaction) evaluation was completed for the project site.
- Peak parking demand analyses were performed for each parking zone.

Proposed Development

The Saddle Rock Crossing project will be served by two driveways: one will form the south leg of the existing intersection of Soldiers Pass Road/SR 89A and one along Saddlerock Circle and will provide 210 total parking stalls.

Figure 3 shows the parking zones analyzed within the proposed Saddle Rock Crossing site. Zone 1 provides 21 surface parking stalls and two bus bays (which can also be used for twelve regular vehicle parking spaces), Zone 2 encompasses the remaining 177 parking spaces in a two-tiered parking structure. Due to the configuration of the site, Zone 1 is expected be exclusively used by the hotel land use and its guests, while Zone 2 will accommodate parking demand for the hotel, restaurant, rooftop bar, and the onsite residences.

Figure 1 – Vicinity Map



LEGEND:

EXISTING ROAD

PROJECT SITE

LOBBY / RESTAURANT

HOTEL: 76 guest rooms.

HOTEL: 38 guest rooms
Basement/ Business Center

HOTEL: 8 guest rooms.
Treehouse Suites

MULTI-FAMILY:
26 units

MULTI-FAMILY
14 units (Workforce)

Building/ Description:	Units		Area		Parking required		
HOTEL ELEMENT							
Lobby / Treehouse Suites							
Lobby / Restaurant		Level 1	14000		Restaurant - 3000 s.f.		
		Level 2	8400		*1 space / 100 s.f.*	30	sp.
		Basement	14000		Bar- 985 s.f.		
		Subtotal	**36,400**		*1 space / 250 s.f.*	4	sp.
Hotel - Treehouse		Level 1	5550		Lodging- 8 units		
		Level 2	5550		*1 space / unit*	8	sp.
		Subtotal	**11,100**		Additional spaces	10	sp.
PLAN KEY	*8*	Lodging Units					
East Wing							
Hotel Guest Rooms		Level 1	11500		Lodging- 38 units		
		Level 2	10000		*1 space / unit*	38	sp.
		Basement	12000				
		Subtotal	**33,500**				
PLAN KEY	*38*	Lodging Units					
North Wing							
Hotel Guest Rooms		Level 1	11500		Lodging- 38 units		
		Level 2	10000	s.f.	*1 space / unit*	38	sp.
		Subtotal	**21,500**	s.f.			
PLAN KEY	*38*	Lodging Units					
West Wing							
Hotel Guest Rooms		Level 1	11500		Lodging- 38 units		
		Level 2	10000	s.f.	*1 space / unit*	38	sp.
	38	Subtotal	**21,500**	s.f.			
PLAN KEY	*38*	Lodging Units					
MULTI-FAMILY ELEMENT							
Multi-Family - South							
Multi-Family units		Level 1	5900		Dwelling, Multifamily		
		Level 2	5900	s.f.	Studio - 24 units		
	12	Subtotal	**11,800**	s.f.	*1 space / unit*	24	sp.
PLAN KEY					1 Bedroom- 4 units		
					1.25 spaces / unit	5	sp.
	12	Multi Family Units			2 Bedroom - 12 units		
Multi-Family - North					*1.75 spaces / unit*	21	sp.
Multi-Family units		Level 1	7600				
(Incl. Workforce)		Level 2	7050	s.f.			
	28	Subtotal	**14,650**	s.f.			
PLAN KEY	*28*	Multi Family Units					
		Total Bldg Area:	**150,450**	**s.f.**	**Parking Required:**	**216**	**sp.**
					Parking Provided:	**210**	**sp.**
Total Lodging Units:	**122**	**Lodging Units**					
Total Multi Family Units:	**40**	**Multi Family Units**					

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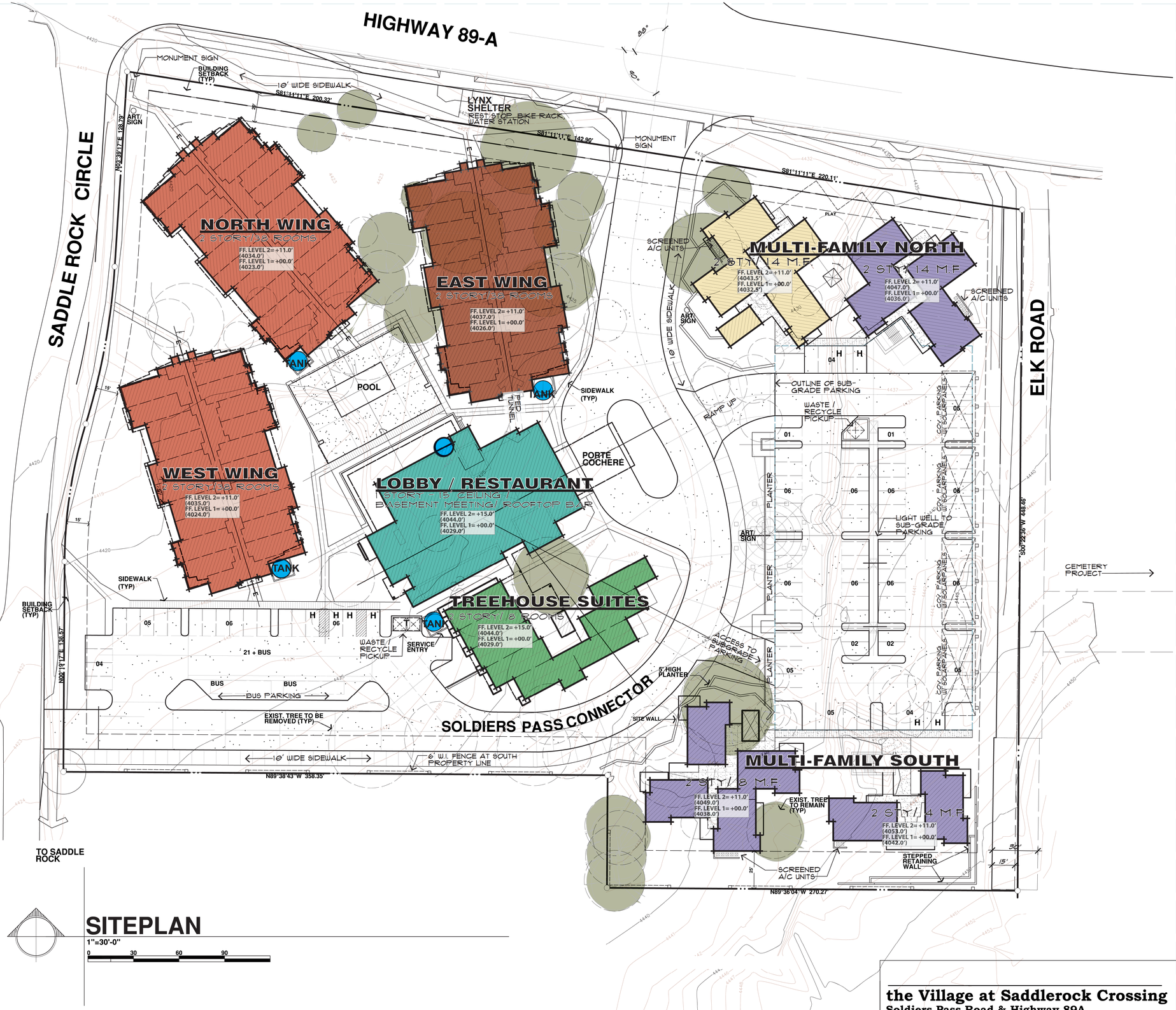

SITEPLAN

1"=30'-0"

0 30 60 90

the Village at Saddlerock Crossing
Soldiers Pass Road & Highway 89A
Sedona Arizona

Stephen Thompson Architect. Sedona/Del Mar
Studio@StephenThompsonArchitect.com
C: 928.301.5922

4/19/2021

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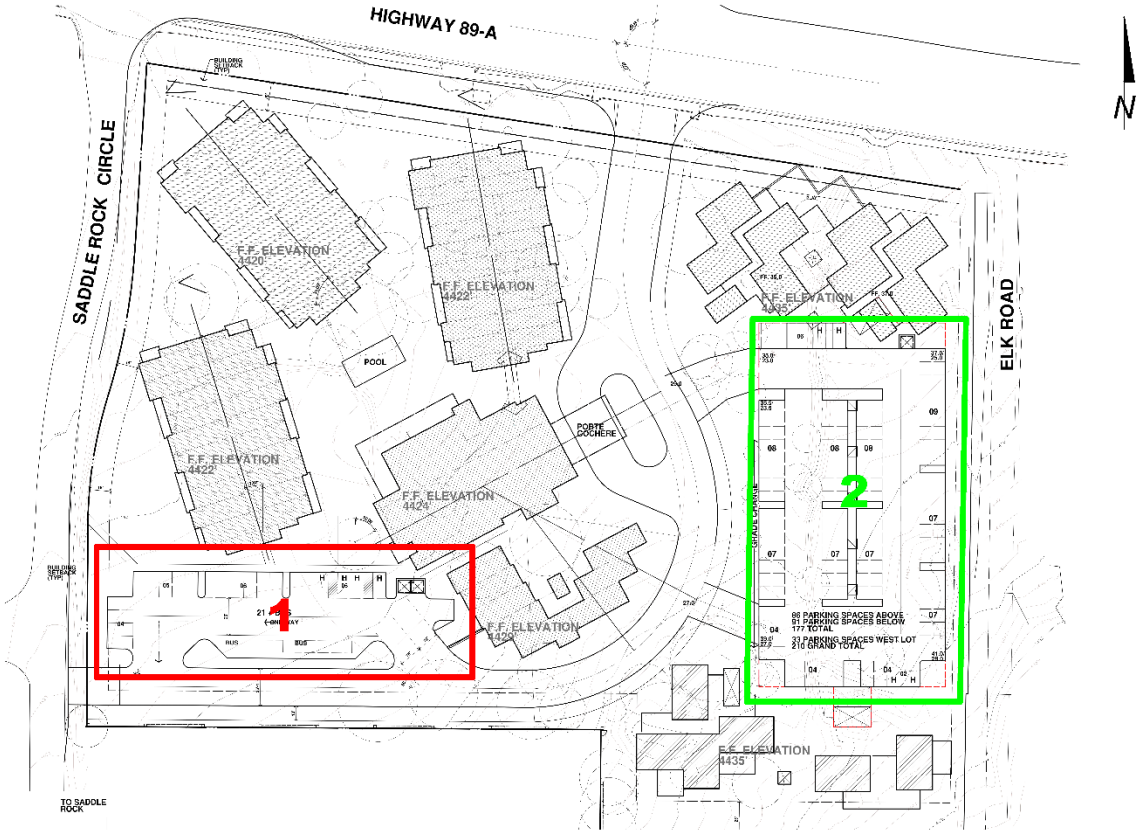
Figure 3 – Parking Zones



Local Parking Requirements

City of Sedona provides parking requirements for various land uses in their *Sedona City Code Chapter 5.5 – Off-Street Parking and Loading* and are shown in **Table 1**. Per Section D.4 of the city code, bus parking areas are credited as six standard spaces each which may be counted to "satisfy the required number of off-street parking spaces." Furthermore, the City of Sedona requires "bike racks, bike lockers, or similar parking facilities" to accommodate bicycles at a ratio of one bicycle space per ten vehicle parking spaces.

Table 1 – City of Sedona Parking Requirements

Land Use		Size	City of Sedona Parking Requirements	Minimum Parking Spaces
Dwelling, Multifamily	Studio	24 units	1 spaces per unit	24
	1 Bedroom	4 units	1.25 spaces per unit	5
	2 Bedroom	12 units	1.75 spaces per unit	21
Lodging	Medium-Density	122 units	1 spaces per unit and an additional 10 spaces	132
Food and Beverage Service	Restaurant	3,000 sq.ft.	1 spaces per 100 square feet	30
	Bar	985 sq.ft.	1 spaces per 250 square feet	4
			TOTAL VEHICLE SPACES	**216**
			TOTAL BICYCLE SPACES	**22**

As shown in **Table 1**, City of Sedona parking requirements show a minimum of 216 parking spaces to serve the proposed Saddle Rock Crossing site. This requirement is 6 parking spaces more than the 210 parking stalls currently proposed.

The Saddle Rock Crossing site should provide no less than 22 bicycle parking stalls throughout the site.

National Parking Ratio Evaluation

Based on City of Sedona requirements, the Saddle Rock Crossing site currently proposes 6 fewer parking spaces than will be required. National parking rates established by the Institute of Transportation of Engineering (ITE) were calculated to provide a comparison to the City of Sedona requirements and the currently proposed 210 parking spaces.

Multi-family, hotel, and restaurant establishments in North America have been analyzed to identify average rates of peak parking demand for weekday and weekend periods. These results have been compiled into the ITE *Parking Generation Manual, 5th Edition* (January 2019).

Tables 2 and **3** show the peak parking demand rates from ITE during the weekday and weekend peak periods, respectively. Where the number of studies presented within the data exceeded twenty sites, the parking requirements and calculations were based on the fitted curve equation opposed to the average rate provided.

Table 2 – Weekday ITE Parking Requirements

Land Use	Size	Weekday ITE Parking Requirements	Minimum Parking Spaces
Multifamily Housing (Low-Rise), LUC 220	24 units	Ln(P) = 0.99Ln(units) + 0.15	28
	4 units		5
	12 units		14
Hotel, LUC 310	114 units	Ln(P) = 0.90Ln(units) + 0.26	23
All Suites Hotel, LUC 311	8 units	0.77 spaces per unit	7
High-Turnover (Sit Down) Restaurant, LUC 932	3,000 sq.ft.	9.44 spaces per 1,000 sq ft	29
	985 sq.ft.		10
		TOTAL	**116**

Table 3 – Weekend ITE Parking Requirements

Land Use	Size	Weekend ITE Parking Requirements	Minimum Parking Spaces
Multifamily Housing (Low-Rise), LUC 220	24 units	Ln(P) = 0.90Ln(units) + 0.79	39
	4 units		8
	12 units		21
Hotel, LUC 310	114 units	1.15 spaces per unit	23
All Suites Hotel, LUC 311	8 units	0.91 spaces per unit	8
High-Turnover (Sit Down) Restaurant, LUC 932	3,000 sq.ft.	12.28 spaces per 1,000 sq ft	37
	985 sq.ft.		13
		TOTAL	**149**

As shown in **Tables 2** and **3**, the parking rates established by ITE result in a minimum parking space requirement of 116 parking spaces on weekdays and 149 parking spaces on weekends. The currently proposed 210 parking spaces will adequately accommodate both the weekday and weekend ITE peak parking demands.

Shared Parking Evaluation

Table 1 shows that the total number of required parking spaces for the site is 216 based on the separate land uses outlined for the City of Sedona off-street parking requirements. With a total of 210 parking spaces proposed with the Saddle Rock Crossing site, the minimum parking spaces required is expected to exceed the proposed spaces by 6 parking stalls, based on the application of separate land use calculations. The total number of 'minimum required' parking spaces for the site is the combined total of the parking space requirements for each individual land use and is an oversimplification of the actual parking needs of a mixed-use development.

Many municipal agencies in the State of Arizona, including the City of Sedona, allow for the consideration of shared parking interaction within a mixed-use development. Shared parking interaction is the concept of different businesses using the same parking space as the vehicle driver visits multiple locations after parking. For example, it would be quite common for someone staying at a hotel to walk to an adjacent restaurant and eat dinner. This patron would only be using one parking spot, assuming they commuted to the development via a passenger vehicle.

Generally accepted shared parking interaction factors in mixed-use developments range from 10% to 30%. However, the City of Sedona does not provide specific requirements for shared parking interactions. To provide a conservative analysis, the low end of this range (10%) was assumed for the Saddle Rock Crossing development. The result of this 10% shared parking interaction is presented in **Table 4**. It should be mentioned that a shared parking interaction factor was not applied to parking areas serving one lane use or for residential portions of this site, as resident parking will be reserved at all times.

Table 4 – Saddle Rock Crossing Shared Parking (Interaction)

Land Use		Size	City of Sedona Minimum Parking Requirement	Shared Parking Reduction (10%)
Dwelling, Multifamily	Studio	24 units	24	24*
	1 Bedroom	4 units	5	5*
	2 Bedroom	12 units	21	21*
Lodging	Medium-Density	122 units	132	119
Food and Beverage Service	Restaurant	3,000 sq.ft.	30	27
	Bar	985 sq.ft.	4	4
* no reduction applied		**TOTAL**	**216**	**200**

As shown in **Table 4**, based on City of Sedona parking requirements and a 10% shared parking interaction, vehicles within Saddle Rock Crossing site are anticipated to require 200 parking spaces per day which is expected to be adequately accommodated by the 210 parking stalls currently proposed.

Peak Parking Evaluation

Taking the parking calculations another step further, a peak parking demand analysis was completed for each parking zone within Saddle Rock Crossing. Each proposed land use has a distinct high parking demand time. For example, offices and employment centers experience peak parking during working hours. Retail and restaurant developments usually experience peaks during the midday, while fitness centers are expected to experience peaks in the evening.

The Urban Land Institute (ULI) provides nationally agreed upon peak parking demand data for multiple land uses, including those proposed within the Saddle Rock Crossing development. This data is used by many jurisdictions within the State of Arizona. ULI peak parking demand data was applied to the parking space requirements (with 10% reduction) for the project site based on City of Sedona guidelines (shown in **Table 4**) and are summarized in **Table 5**. Peak parking rates were then also applied to the parking demand estimated by ITE, as shown in **Table 6**. Complete calculations can be found in the Appendix.

Table 5 – Peak Parking Demand (City of Sedona)

Zone/Land Use		Proposed Parking Spaces	City of Sedona Peak Parking Demand	
			Weekday	Weekend
Zones 1+2	*One or two-family residence; multiple dwellings; efficiency units; one-bedroom units; two or more bedroom units.*	210	193	196
	Hotels, motels			
	Restaurants, bars, cocktail lounges			
	TOTAL	**210**	**193**	**196**

Table 6 – Peak Parking Demand (ITE)

Zone/Land Use		Proposed Parking Spaces	ITE Peak Parking Demand	
			Weekday	Weekend
Zones 1+2	*One or two-family residence; multiple dwellings; efficiency units; one-bedroom units; two or more bedroom units.*	210	107	136
	Hotels, motels			
	Restaurants, bars, cocktail lounges			
	TOTAL	**210**	**107**	**136**

As shown in **Tables 5** and **6**, the proposed 210 parking spaces are expected to adequately accommodate the peak parking demands on weekday and weekends.

Conclusion

The Saddle Rock Crossing development proposes to construct 198 parking spaces and two bus bays, which may be credited to required parking as six (6) vehicles spaces per bus bay, for a total of 210 parking spaces. An on-site underground parking structure will house 125 of the proposed parking spaces. Based on the most basic application of the City of Sedona parking requirements, Saddle Rock Crossing will require 216 parking spaces (6 more than is proposed). After consideration of shared parking interactions based on the minimum parking calculations of the separate land uses within the proposed site, the required number of parking spaces is further reduced to 200 parking spaces (10 less than is proposed). Analysis of peak parking demand throughout the site show that a minimum of 210 parking spaces can be provided (10 less than is proposed).

The proposed 210 parking spaces within the Saddle Rock Crossing site are expected to adequately serve the weekday and weekend peak parking demands, based on City of Sedona and ITE parking requirements.

As busses or shuttles will be available to transport visitors staying at the hotel to the sites of natural beauty surrounding the City of Sedona, other visitor accommodations, and local recreational activities, parking requirements for the Saddle Rock Crossing development may experience further reduced demand.

SADDLE ROCK CROSSING
SOLDIERS PASS ROAD/SR 89A
PARKING ANALYSIS

APPENDIX

Peak Parking Demand Calculations

Oro Valley Village Center
Parking Analysis

ZONE 1+2

City of Sedona Requirements

Shared Interaction	10%
Multi-Modal Reduction	0%
Total Reduction	**10%**

Peak Parking Demands (Weekday)

Time	Residential	Casual Restaurant	Hotel
7:00	90%	0%	95%
8:00	85%	0%	90%
9:00	80%	0%	80%
10:00	75%	15%	70%
11:00	70%	40%	70%
12:00	65%	75%	65%
1:00	70%	75%	65%
2:00	70%	65%	70%
3:00	70%	40%	70%
4:00	75%	50%	75%
5:00	85%	75%	80%
6:00	90%	95%	85%
7:00	97%	100%	85%
8:00	98%	100%	90%
9:00	99%	100%	95%
10:00	100%	95%	95%
11:00	100%	75%	100%
12:00	100%	25%	100%

	Apartments	Casual Restaurant	Hotel	Total Zone
Required Parking	**50**	**34**	**132**	**216**
	45	0	113	158
	43	0	107	149
	40	0	95	135
	38	5	83	125
	35	12	83	130
	33	23	77	133
	35	23	77	135
	35	20	83	138
	35	12	83	130
	38	15	89	142
	43	23	95	160
	45	29	101	175
	49	31	101	180
	49	31	107	187
	50	31	113	193
	50	29	113	192
	50	23	119	192
	50	8	119	176
Peak Parking Demand	**50**	**31**	**119**	**193**

Peak Parking Demands (Saturday)

Time	Residential	Casual Restaurant	Hotel
7:00	90%	0%	90%
8:00	85%	0%	80%
9:00	80%	0%	70%
10:00	75%	0%	60%
11:00	70%	15%	60%
12:00	65%	50%	55%
1:00	70%	55%	55%
2:00	70%	45%	60%
3:00	70%	45%	60%
4:00	75%	45%	65%
5:00	85%	60%	70%
6:00	90%	90%	75%
7:00	97%	95%	75%
8:00	98%	100%	80%
9:00	99%	90%	85%
10:00	100%	90%	95%
11:00	100%	90%	100%
12:00	100%	50%	100%

	Apartments	Casual Restaurant	Hotel	Total Zone
Required Parking	**50**	**34**	**132**	**216**
	45	0	107	152
	43	0	95	137
	40	0	83	123
	38	0	71	109
	35	5	71	111
	33	15	65	113
	35	17	65	117
	35	14	71	120
	35	14	71	120
	38	14	77	128
	43	18	83	144
	45	28	89	162
	49	29	89	167
	49	31	95	175
	50	28	101	178
	50	28	113	190
	50	28	119	196
	50	15	119	184
Peak Parking Demand	**50**	**31**	**119**	**196**

NOTES:
The peak parking demand percentages utilized are obtained from Urban Land Institute (ULI) guidelines.

For the purposes of this Peak Parking Analysis:

1. A 10% reduction in the parking demand was taken to account for parking interaction (multiple store visits on one vehicle trip to the site, which requires only one parking space).
2. No parking reductions are applied to residential land uses.

Oro Valley Village Center
Parking Analysis

ZONE 1+2

ITE calculations

Shared Interaction	10%
Multi-Modal Reduction	0%
Total Reduction	**10%**

Peak Parking Demands (Weekday)

Time	Residential	Casual Restaurant	Hotel
7:00	90%	0%	95%
8:00	85%	0%	90%
9:00	80%	0%	80%
10:00	75%	15%	70%
11:00	70%	40%	70%
12:00	65%	75%	65%
1:00	70%	75%	65%
2:00	70%	65%	70%
3:00	70%	40%	70%
4:00	75%	50%	75%
5:00	85%	75%	80%
6:00	90%	95%	85%
7:00	97%	100%	85%
8:00	98%	100%	90%
9:00	99%	100%	95%
10:00	100%	95%	95%
11:00	100%	75%	100%
12:00	100%	25%	100%

	Apartments	Casual Restaurant	Hotel	Total Zone
Required Parking	**47**	**39**	**30**	**116**
	42	0	26	68
	40	0	24	64
	38	0	22	59
	35	5	19	59
	33	14	19	66
	31	26	18	74
	33	26	18	77
	33	23	19	75
	33	14	19	66
	35	18	20	73
	40	26	22	88
	42	33	23	99
	46	35	23	104
	46	35	24	105
	47	35	26	107
	47	33	26	106
	47	26	27	100
	47	9	27	83
Peak Parking Demand	**47**	**35**	**27**	**107**

Peak Parking Demands (Saturday)

Time	Residential	Casual Restaurant	Hotel
7:00	90%	0%	90%
8:00	85%	0%	80%
9:00	80%	0%	70%
10:00	75%	0%	60%
11:00	70%	15%	60%
12:00	65%	50%	55%
1:00	70%	55%	55%
2:00	70%	45%	60%
3:00	70%	45%	60%
4:00	75%	45%	65%
5:00	85%	60%	70%
6:00	90%	90%	75%
7:00	97%	95%	75%
8:00	98%	100%	80%
9:00	99%	90%	85%
10:00	100%	90%	95%
11:00	100%	90%	100%
12:00	100%	50%	100%

	Apartments	Casual Restaurant	Hotel	Total Zone
Required Parking	**68**	**50**	**31**	**149**
	61	0	25	86
	58	0	22	80
	54	0	20	74
	51	0	17	68
	48	7	17	71
	44	23	15	82
	48	25	15	88
	48	20	17	85
	48	20	17	85
	51	20	18	89
	58	27	20	104
	61	41	21	123
	66	43	21	130
	67	45	22	134
	67	41	24	132
	68	41	27	135
	68	41	28	136
	68	23	28	118
Peak Parking Demand	**68**	**45**	**28**	**136**

NOTES:
The peak parking demand percentages utilized are obtained from Urban Land Institute (ULI) guidelines.

For the purposes of this Peak Parking Analysis:

1. A 10% reduction in the parking demand was taken to account for parking interaction (multiple store visits on one vehicle trip to the site, which requires only one parking space).
2. No parking reductions are applied to residential land uses.

SOUTHWEST TRAFFIC ENGINEERING, LLC

TRAFFIC IMPACT ANALYSIS

SADDLE ROCK CROSSING

SOLDIERS PASS ROAD/STATE ROUTE 89A (SR 89A)

25 MAY 2021

PREPARED FOR

BANEY CORPORATION
475 NE BELLEVUE DRIVE, SUITE S210
BEND, OREGON 97701

SOUTHWEST TRAFFIC ENGINEERING, LLC
3838 NORTH CENTRAL AVENUE, SUITE 1810
PHOENIX, AZ 85012
T 602.266.SWTE (7983) F 602.266.1115

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Approved ADOT TIA Presubmittal Form

Prepared By:
Andrew Smigielski, PE, PTOE, PTP
Parker Murphy, EIT

Executive Summary

The purpose of this traffic study is to evaluate the current and future transportation system within the project study area surrounding the site without and with the proposed Saddle Rock Crossing project.

Existing Traffic Data

The intersection of Saddlerock Circle/State Route 89A (SR 89A) currently experiences excessive delays for the northbound and southbound turning movements. Un-signalized minor approaches to high volume state highways tend to have their turning movements operate at level of service (LOS) E or F in the weekday peak hours due to the limited number of sufficient gaps for vehicles to complete a turning movement.

The remaining study intersections currently operate at adequate LOS.

Future Traffic Data Without the Project

The existing delays at the intersection of Saddlerock Circle/SR 89A are expected to continue and worsen in 2021 and 2024 without traffic from the Saddle Rock Crossing site.

The remaining study intersections are anticipated to continue to operate at adequate LOS.

Future Traffic Data With Project

The intersection of Saddlerock Circle/SR 89A is expected to continue to operate at an inadequate LOS with the addition of traffic volumes associated with the proposed project.

All remaining study intersections are expected to operate at an adequate LOS.

Turn Lane Analysis

No additional auxiliary turn lanes are warranted at the access points serving the Saddle Rock Crossing site.

Crash Analysis
Based on crash data retrieved from the ADOT database, fifteen (15) crashes have occurred at the intersection of Soldiers Pass Road/SR 89A in the five-year study (1 Jan 2015 – 31 Dec 2019) analyzed. Of these crashes, eight (8) were rear-end type collisions. These types of crashes are often due to driver inattention, failure to slow or stop, and are common at signalized intersections.

With limited crashes at the remaining study intersections, no specific crash trends can be identified.

Mitigation
The intersection of Saddlerock Circle/SR 89A currently experiences excessive delays for the northbound and southbound turning movements. Un-signalized minor approaches to high volume state highways tend to have their turning movements operate at LOS E or F in the weekday peak hours due to the limited number of sufficient gaps for vehicles to complete a turning movement. The installation of traffic signal would be expected to alleviate these delays.

However, due to the proximity of the intersection of Saddlerock Circle/SR 89A to the existing signalized intersection of Soldiers Pass Road/SR 89A, the installation of an additional traffic signal is not recommended. Traffic signals, when spaced too closely, often have a negative impact on traffic flow and can be difficult to coordinate. If excessive delays occur, drivers may, and will be able to, re-route themselves to the signalized intersection at Soldiers Pass Road/SR 89A to complete their left turning movements.

Project Description

Barney Corporation is proposing a mixed land use project south of Soldiers Pass Road/State Route 89A (SR 89A) in Sedona, Arizona. The project will include a 3,000 square foot high turnover restaurant, a 985 square foot rooftop bar, 122-room hotel (8 rooms of which are suite accommodation only), and 40 apartment units. The vicinity of the project is shown in **Figure 1**. The site will be located as shown in **Figure 2**. The Saddle Rock Crossing project will be served by one (1) access point on SR 89A, one access point on Saddlerock Circle, and two (2) access points on Elk Road.

The purpose of this traffic impact analysis is to:

- Evaluate the current and future operational characteristics of the adjacent roadway network surrounding the project site.
- Estimate the traffic generation associated with the project and assign that traffic to the existing roadway system.
- Analyze future traffic operations at three existing intersections and two proposed driveways serving the project area.
- Determine the need for auxiliary (left and right turn) lanes at the driveways that will directly serve the project site.
- Perform a crash analysis to identify any specific crash trends within the study area.

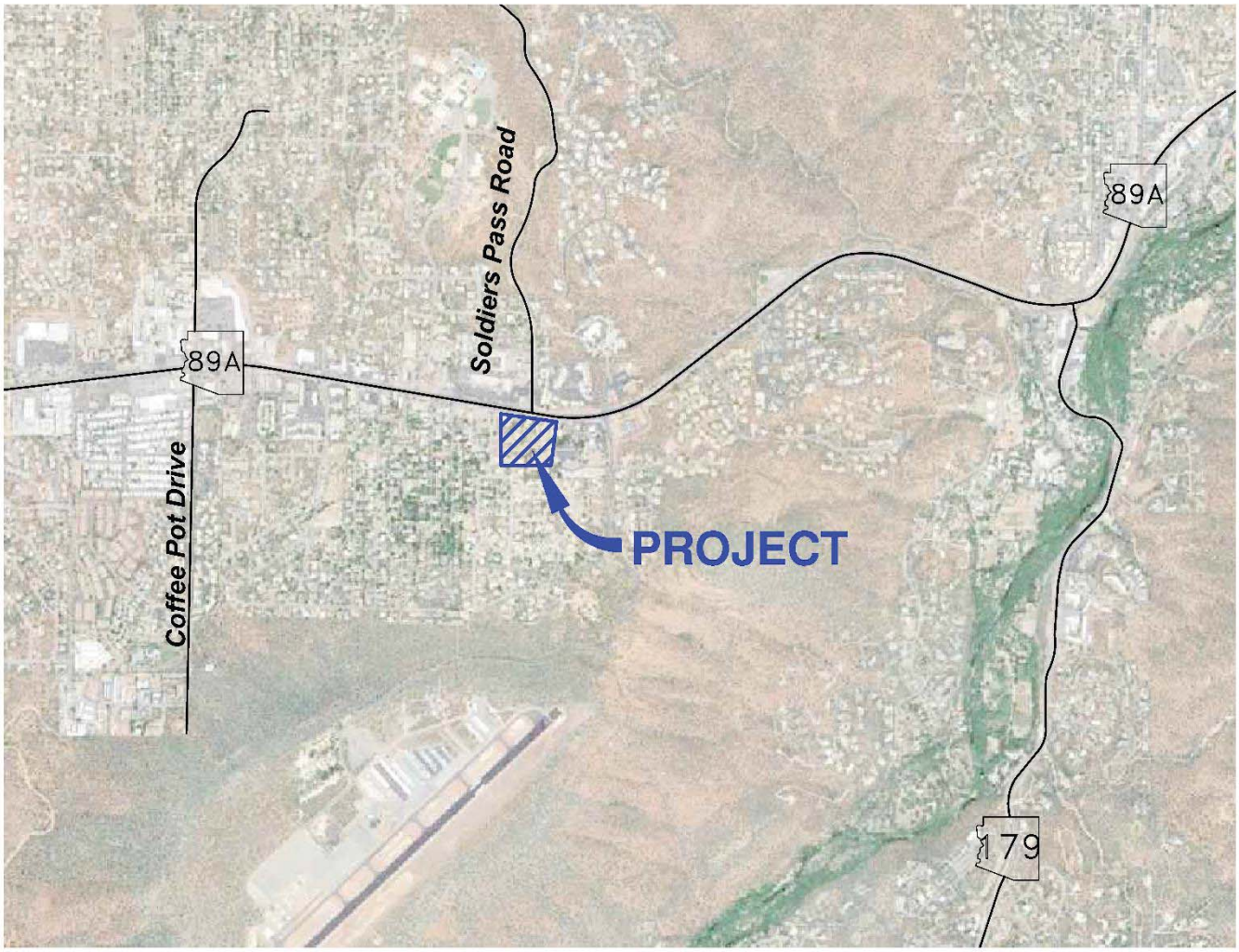
The author of this report is a registered Professional Engineer (Civil) in the State of Arizona having specific expertise and experience in the preparation of traffic impact analyses.

Study Methodology

In order to analyze and evaluate the potential traffic impacts of the proposed development, the following tasks were undertaken:

- Field observation of the proposed site and surrounding area was conducted to evaluate the existing physical and operational characteristics of the adjacent roadway network.
- Site traffic volumes generated by the proposed site were calculated using the *Institute of Transportation Engineers (ITE) Trip Generation Manual, 10th Edition,* 2017.
- Calculated site traffic was distributed based on existing traffic patterns and assigned to the primary roadways within the project study limits.
- Capacity analyses were performed for the existing conditions and future conditions without and with the project based on an opening year of 2021 and a horizon year of 2024 using methodology presented in the *2016 Highway Capacity Manual (HCM 6th)*.
- The need for auxiliary turn lanes at the study driveways was evaluated based on City of Sedona and Arizona Department of Transportation (ADOT) guidelines.
- Crash records were obtained from ADOT to identify any specific crash trends within the study area.

Figure 1 – Vicinity Map



LEGEND:

EXISTING ROAD

PROJECT SITE

LOBBY / RESTAURANT

HOTEL: 76 guest rooms.

HOTEL: 38 guest rooms
Basement/ Business Center

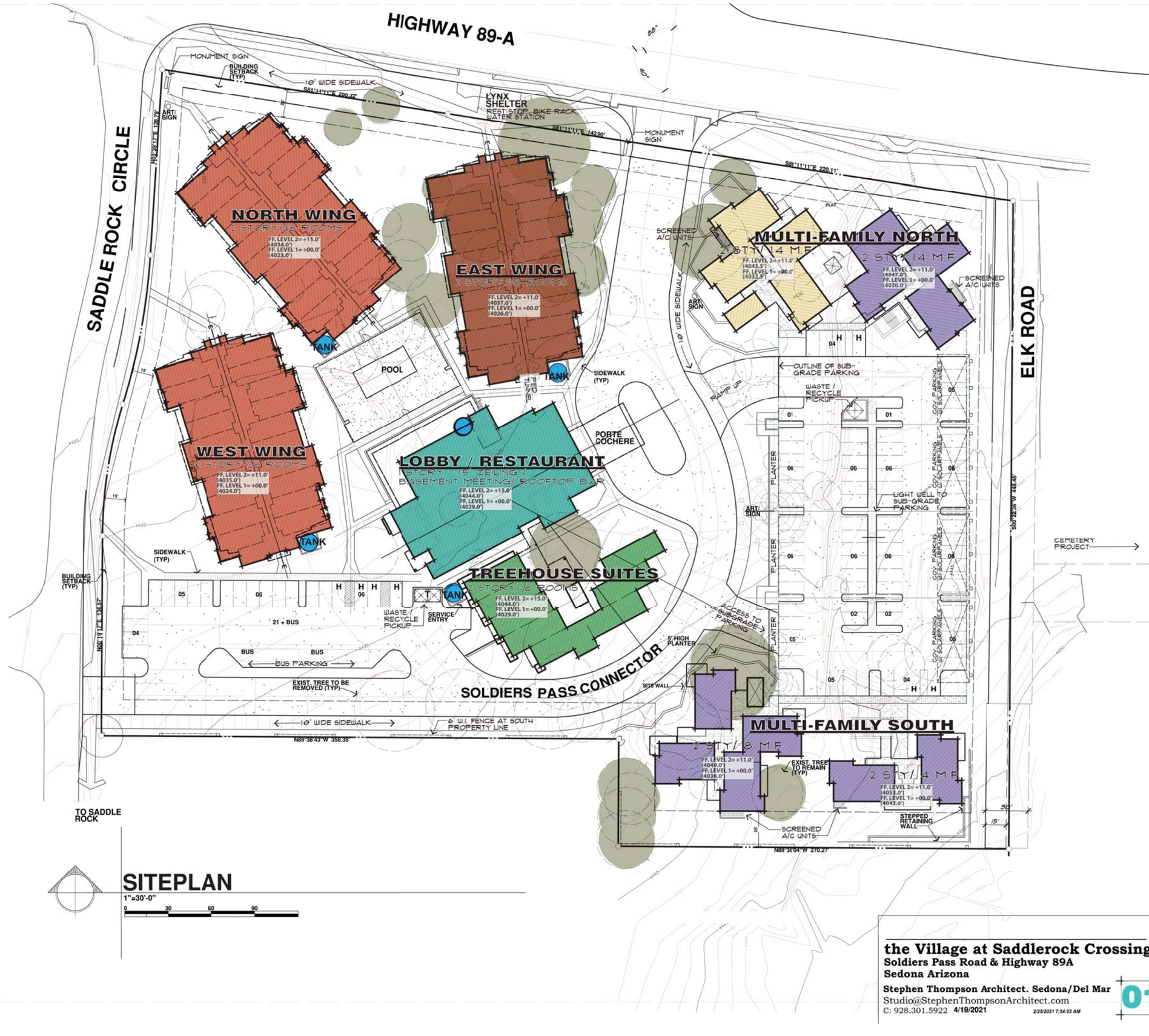
HOTEL: 8 guest rooms.
Treehouse Suites

MULTI-FAMILY:
26 units

MULTI-FAMILY
14 units (Workforce)

Building/ Description:		Units	Area		Parking required		
HOTEL ELEMENT							
Lobby / Treehouse Suites							
Lobby / Restaurant	Level 1		14000		Restaurant - 3000 s.f.		
	Level 2		8400		*1 space / 100 s.f.*	30	sp.
	Basement		14000		Bar- 985 s.f.		
	Subtotal		**36,400**		*1 space / 250 s.f.*	4	sp.
Hotel - Treehouse	Level 1		5550		Lodging- 8 units		
	Level 2		5550		*1 space / unit*	8	sp.
	Subtotal		**11,100**		Additional spaces	10	sp.
PLAN KEY		*8*	Lodging Units				
East Wing							
Hotel Guest Rooms	Level 1		11500		Lodging- 38 units		
	Level 2		10000		*1 space / unit*	38	sp.
	Basement		12000				
	Subtotal		**33,500**				
PLAN KEY		*38*	Lodging Units				
North Wing							
Hotel Guest Rooms	Level 1		11500		Lodging- 38 units		
	Level 2		10000	s.f.	*1 space / unit*	38	sp.
	Subtotal		**21,500**	s.f.			
PLAN KEY		*38*	Lodging Units				
West Wing							
Hotel Guest Rooms	Level 1		11500		Lodging- 38 units		
	Level 2		10000	s.f.	*1 space / unit*	38	sp.
	38 Subtotal		**21,500**	s.f.			
PLAN KEY		*38*	Lodging Units				
MULTI-FAMILY ELEMENT							
Multi-Family - South							
Multi-Family units	Level 1		5900		Dwelling, Multifamily		
	Level 2		5900	s.f.	Studio - 24 units		
	12 Subtotal		**11,800**	s.f.	*1 space / unit*	24	sp.
					1 Bedroom- 4 units		
					1.25 spaces / unit	5	sp.
PLAN KEY		*12*	Multi Family Units		2 Bedroom - 12 units		
					1.75 spaces / unit	21	sp.
Multi-Family - North							
Multi-Family units	Level 1		7600				
(Incl. Workforce)	Level 2		7050	s.f.			
	28 Subtotal		**14,650**	s.f.			
PLAN KEY		*28*	Multi Family Units				
	Total Bldg Area:		**150,450**	s.f.	**Parking Required:**	**216**	**sp.**
Total Lodging Units:	*122*	**Lodging Units**			**Parking Provided:**	**210**	**sp.**
Total Multi Family Units:	*40*	**Multi Family Units**					

SHEET INDEX:



SITEPLAN

1"=30'-0"

0 30 60 90

the Village at Saddlerock Crossing
Soldiers Pass Road & Highway 89A
Sedona Arizona

Stephen Thompson Architect. Sedona/Del Mar
Studio@StephenThompsonArchitect.com
C: 928.301.5922

4/19/2021

2/25/2021 7:54:53 AM

01

Existing Conditions

The proposed Saddle Rock Crossing project will be located on undeveloped land south of Soldiers Pass Road/SR 89A in Sedona, Arizona.

State Route 89A is a state highway that runs from Prescott to Flagstaff. Adjacent to the site, the highway provides two through lanes in each direction separated by a two-way center left turn lane. Curb, gutter, sidewalk, bike lanes, and street lighting are present along SR 89A. The speed limit of the roadway is 35 miles per hour (mph) near the project site.

Soldiers Pass Road is a two-lane road that extend north from SR89A. The roadway mainly serves residential land use. Curb and gutter are present on both sides of Soldiers Pass Road, with sidewalk present on the west side. The speed limit of the roadway is 25 mph.

Saddlerock Circle is a two-lane roadway that provides access to a residential area. On-street parking is permitted on the roadway. No speed limit is posted on Saddlerock Circle.

Elk Road serves commercial developments south of SR 89A and offers one lane for each direction of travel. On-street parking is allowed on the majority of Elk Road. No posted speed limit is present on the roadway.

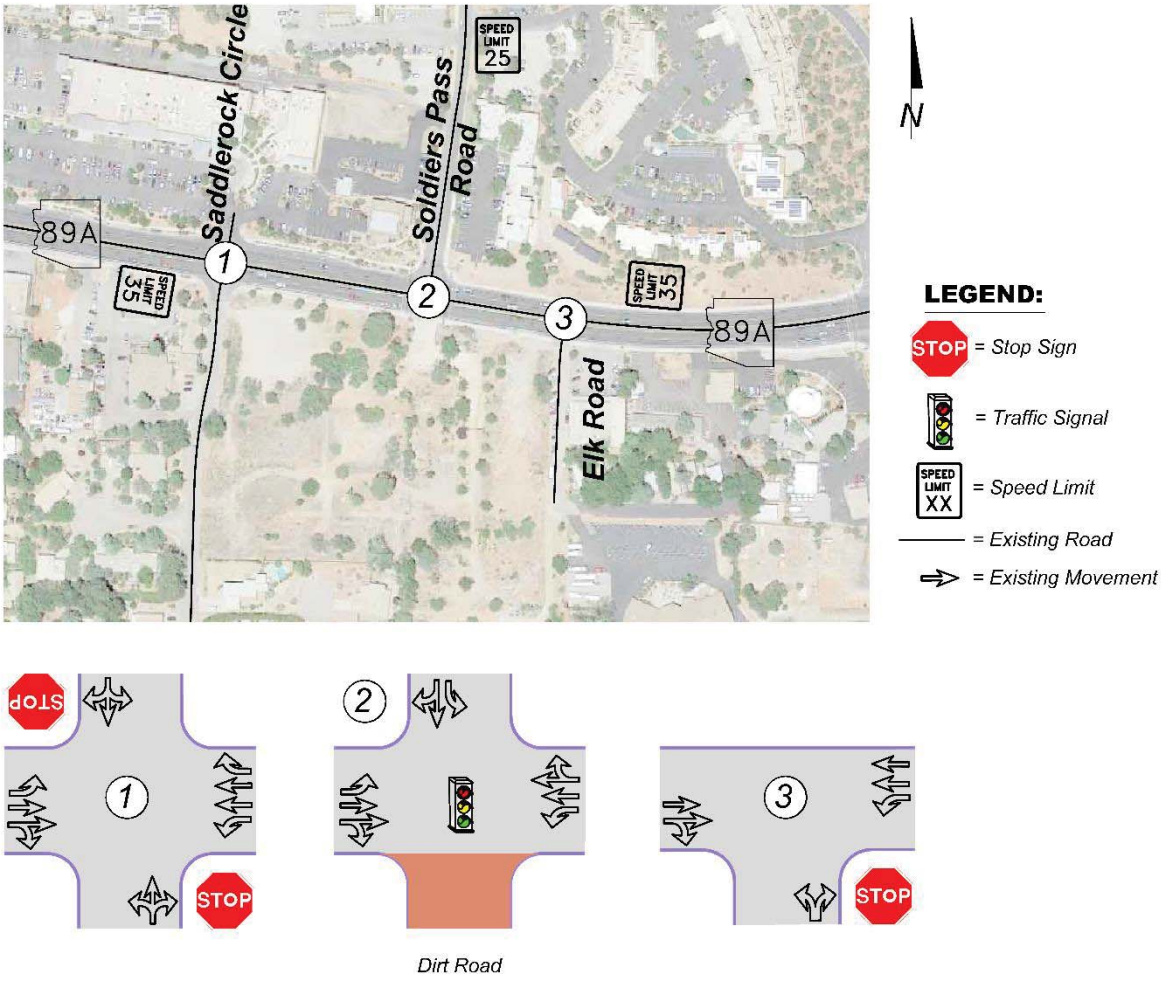
Soldiers Pass Road/SR 89A is a four-legged signalized intersection. Eastbound traffic makes use of an exclusive left turn lane, a through lane, and a shared through/right turn lane. The westbound approach to the intersection is provided with an exclusive left turn lane, one through lanes, and a shared through/right turn lane. Southbound vehicles utilize an exclusive left turn lane and a shared through/right turn lane. The northbound approach to an intersection is unpaved and provides access to an undeveloped parcel where drivers from adjacent properties cut through to use the traffic signal. Eastbound and westbound protected/permitted left turn phasing is provided at the intersection. Northbound and southbound left turn movements operate under permitted only traffic signal phasing.

Saddlerock Circle/SR 89A is a four-legged un-signalized intersection. Eastbound vehicles are provided with a two-way center left turn lane, one through lane, and one shared through/right turn lane. Westbound traffic makes use of a two-way center left turn lane, two through lanes, and an exclusive right turn lane. Northbound and southbound vehicles are STOP controlled and are offered a shared left/through/right lane. The north leg of the intersection serves as a driveway to retail/commercial developments.

Elk Road/ SR 89A is a three-legged un-signalized intersection. The eastbound approach to the intersection makes use of one through lane and a shared through/right turn lane. Westbound traffic is offered a two-way center left turn lane and two through lanes. Northbound vehicles are STOP controlled and utilize a shared left/right turn lane.

The study intersection locations, lane configurations, and intersection control are shown in **Figure 3**.

Figure 3 – Existing Lane Configurations and Traffic Control



Existing Traffic Data

In order to form a basis for analysis of the project impacts, weekday AM and PM peak hour turning movement counts were conducted at the intersections of Saddlerock Circle/SR 89A, Soldiers Pass Road/SR 89A, and Elk Road/SR 89A.

The weekday turning movement counts were conducted from 7:00 AM to 9:00 AM and 4:00 PM to 6:00 PM. All traffic data was collected in October 2019 while school was in session.

The existing weekday AM/PM peak hour traffic volumes are shown in **Figure 4**. Complete traffic count data can be found in the Appendix.

Additionally, 48-hour bi-directional vehicle speed counts were taken on Saddlerock Circle, north of June Big Circle. **Table 1** shows the average speeds and portion of drivers traveling over 25 mph, 30 mph and over, and 35 mph and over in the section of roadway analyzed. Complete vehicle speed count summaries can be found in the Appendix.

Table 1 – Vehicle Speed Breakdown

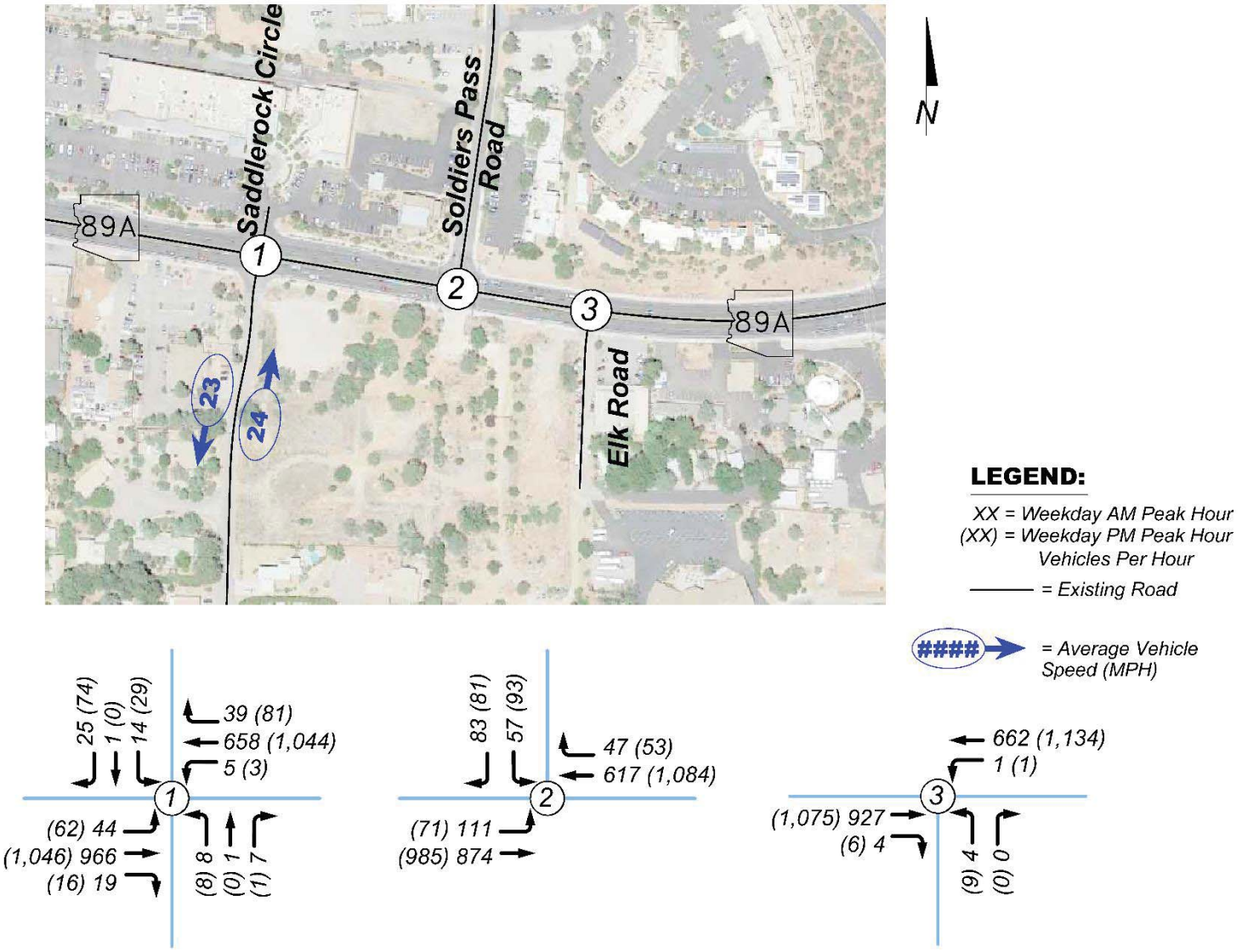
Location	Average Speed (MPH)	% over 25 MPH	% over 30 MPH	% over 35 MPH
Saddlerock Circle, between Junebug Circle and SR 89A				
Northbound	24	36.0%	7.3%	0.0%
Southbound	23	26.5%	2.9%	0.5%
Average	23	30.7%	4.8%	0.3%

MPH - Miles Per Hour

As shown in **Table 1**, motorists on Saddlerock Circle travel at an average speed of 23 to 24 mph with a northbound-southbound average of 69.3% of vehicles traveling under 25 mph.

A survey of various cities in Arizona that perform vehicle speed studies in neighborhoods indicates that drivers tend to select speeds somewhat higher than the posted speed limit, generally traveling at an average of 3 to 7 mph over the posted speed limit. Furthermore, it has been found that about ten to fifteen percent of motorists on residential streets exceed the speed limit by more than ten mph. While there is no posted speed limit in the immediate vicinity of this location, the speed data collected is consistent with the expectation of vehicles speeds on residential roadways.

Figure 4 – Existing Weekday Peak Hour Traffic Volumes



Access

The Saddle Rock Crossing project will be served by two driveways: one will form the south leg of the existing intersection of Soldiers Pass Road/SR 89A and one along Saddlerock Circle.

The south leg of the existing intersection of Soldiers Pass Road/SR 89A will serve as the main access point for the proposed development. Northbound vehicles will be provided with an exclusive left turn lane and a shared through/right turn lane.

West Driveway will be located on the east side of Saddlerock Circle, approximately 200 feet south of SR 89A. Vehicles exiting the site westbound will be provided a shared left turn/right turn lane. Northbound vehicles will be offered a shared through/right turn lane while southbound traffic will make use of a shared left turn/through lane.

Figure 5 shows the locations, geometry and spacing for the proposed driveways serving the project site that will serve as a baseline of analysis in the report.

Trip Generation

Trip generation was developed utilizing nationally agreed upon data contained in the Institute of Transportation Engineers (ITE) publication *Trip Generation, 10th Edition*, 2017. The Saddle Rock Crossing project trip generation was based on the following land uses and corresponding ITE Land Use Codes (LUCs):

- 40 apartment units (LUC 220, Multi-Family Housing (Low-Rise))
- 114-room hotel, (LUC 310, Hotel)
- 8 hotel suite rooms (LUC 311, All Suite Hotel)
- 985 square foot rooftop bar (LUC 925, Drinking Place)
- 3,000 square foot Restaurant (LUC 932, High-Turnover (Sit-down) Restaurant)

The result is the expected weekday trip generation for the project as shown in **Table 2**. The complete trip generation calculations can be found in the Appendix.

Figure 5 – Baseline Access Point and Intersection Configuration Assumptions

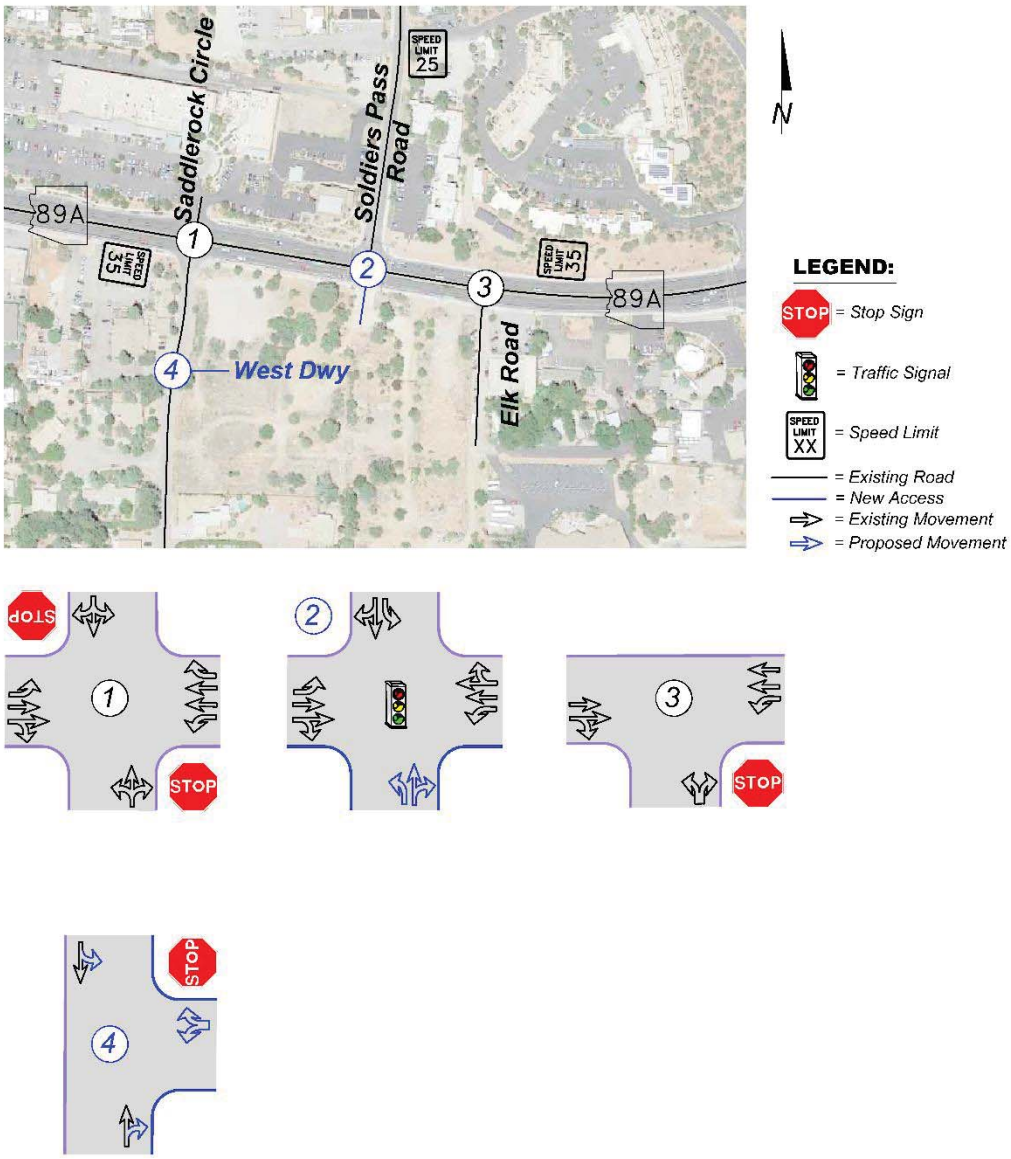


Table 2 – Project Site Generated Trips

Time Period	Multi-Family Housing	Hotel	All Suites Hotel	Rooftop Bar	High Turnover Restaurant	Total
Average Daily, Inbound (vtpd)	131	431	18	N/A	169	749
Average Daily, Outbound (vtpd)	131	431	18	N/A	169	749
Total Daily	**262**	**862**	**36**	**N/A**	**338**	**1,498**
AM Peak Hour, Inbound (vtph)	5	31	2	N/A	17	55
AM Peak Hour, Outbound (vtph)	15	21	1	N/A	13	50
Total AM Peak	**20**	**52**	**3**	**N/A**	**30**	**105**
PM Peak Hour, Inbound (vtph)	16	31	1	8	19	75
PM Peak Hour, Outbound (vtph)	10	29	2	4	11	56
Total PM Peak	**26**	**60**	**3**	**12**	**30**	**131**

vtpd - vehicle trips per day, vtph - vehicle trips per hour

Trip Distribution & Assignment

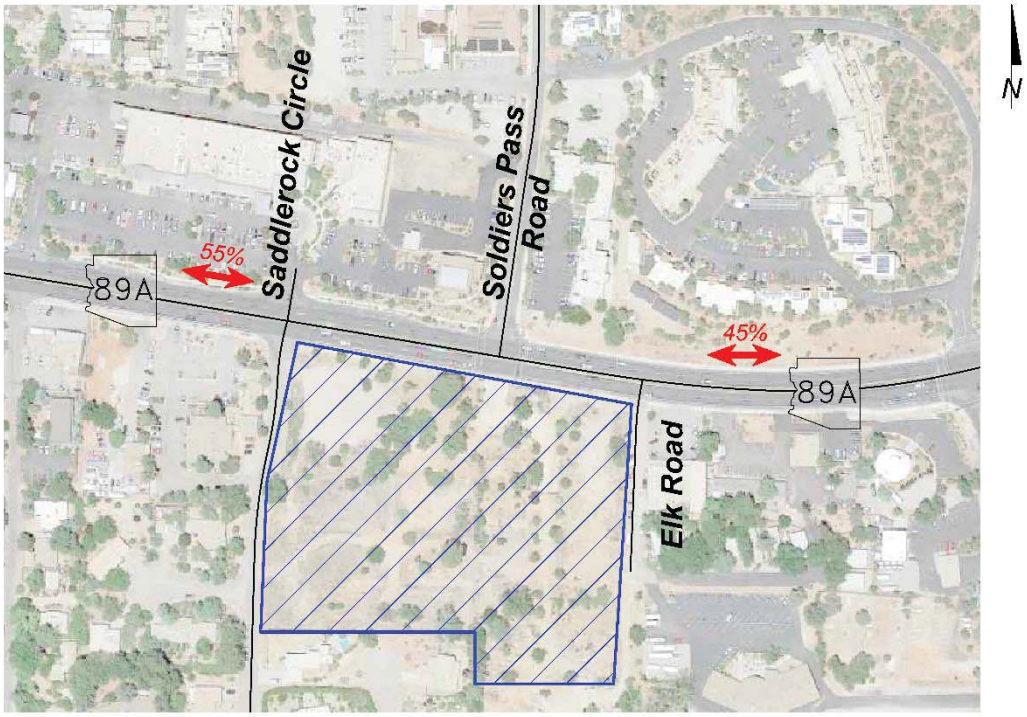
Trip distribution for the project was based on existing traffic volume patterns near the proposed site. **Figure 6** shows the weekday trip distribution for the project as a percentage of net new primary trips. **Figure 7** shows the assignment of the new site generated trips to the project intersections within the study area.

Existing Traffic Operations

Analysis of current intersection operations was conducted for the weekday AM and PM peak hours using the nationally accepted methodology set forth in the *Highway Capacity Manual,* Transportation Research Board, 2016 (HCM 6th). The computer software Synchro 10 was utilized to calculate the levels of service for individual movements and approaches.

LOS is a qualitative measure of the traffic operations at an intersection or on a roadway segment. Level of service is ranked from LOS A, which signifies little or no congestion and is the highest rank, to LOS F, which signifies congestion and jam conditions. LOS D is typically considered adequate operation at signalized and un-signalized intersections in developed areas.

Figure 6 – Weekday Peak Hour Trip Distribution



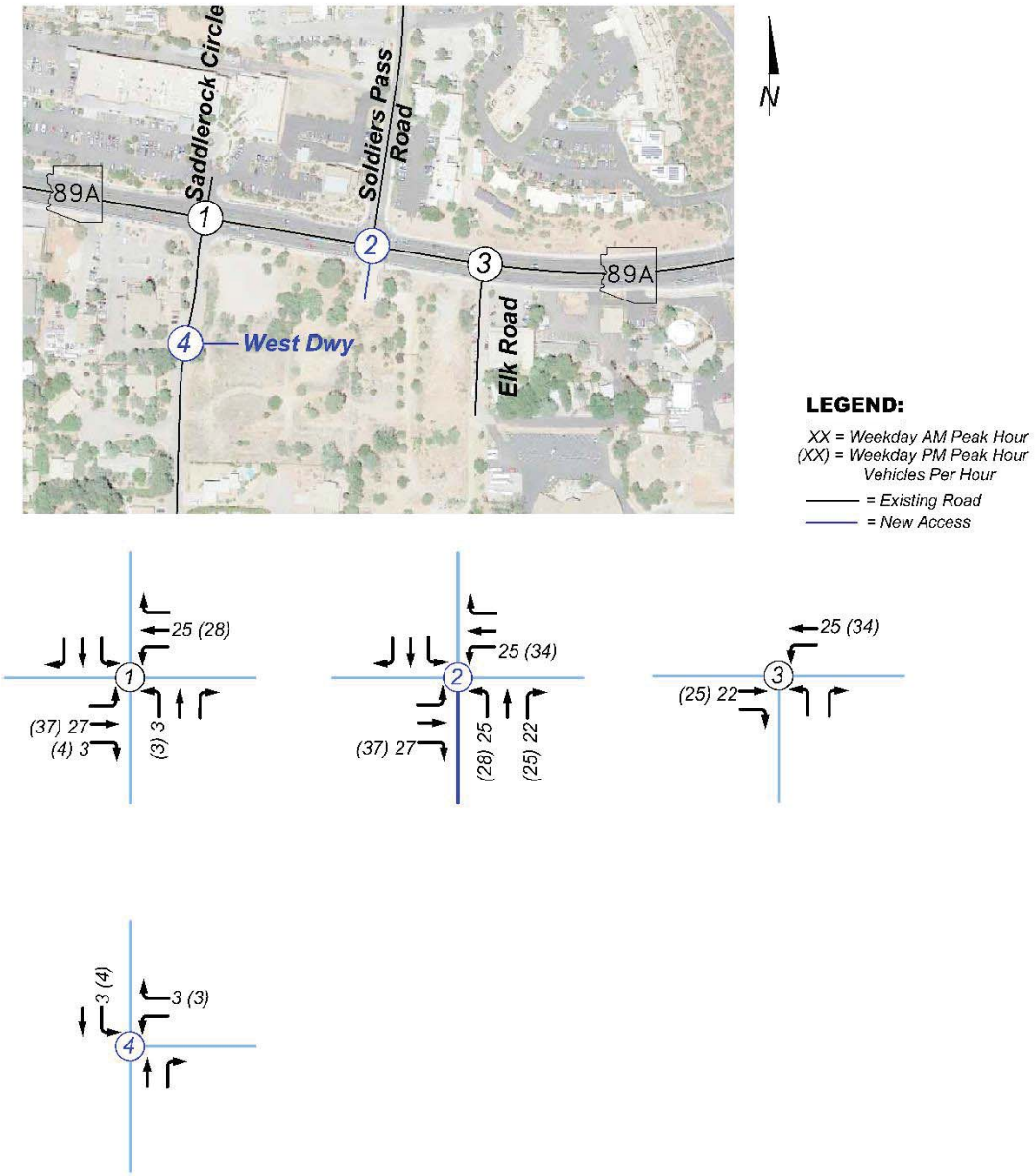
LEGEND:

EXISTING ROAD

PROJECT SITE

XX% DISTRIBUTION OF VEHICLE TRIPS

Figure 7 – Weekday Peak Hour Trip Assignment



At signalized intersections, level of service is calculated for each movement and then summed in a weighted fashion to yield the LOS for the approach and for the intersections as a whole. Criteria for level of service at signalized intersections are shown in **Table 3**.

Table 3 – Level of Service Criteria – Signalized Intersections

Level-of-Service	Average Total Delay
A	≤ 10.0 seconds/vehicle
B	> 10.0 and ≤ 20.0 seconds/vehicle
C	> 20.0 and ≤ 35.0 seconds/vehicle
D	> 35.0 and ≤ 55.0 seconds/vehicle
E	> 55.0 and ≤ 80.0 seconds/vehicle
F	> 80.0 seconds/vehicle

In calculating the levels of service, assumed signal phasing and timing data was used. Other assumptions included:

- Cycle length – 90 seconds
- Lane widths – 12 feet
- Approach grade – 0%
- Right turn on red allowed

At un-signalized intersections, level of service is predicted/calculated for those movements, which must either stop for or yield to oncoming traffic and is based on average control delay for the particular movement. Control delay is the portion of total delay attributed to traffic control measures such as stop signs and traffic signals. The criteria for level of service at un-signalized intersections are shown in **Table 4**.

Table 4 – Level of Service Criteria – Un-signalized Intersections

Level-of-Service	Delay
A	< 10 seconds/vehicle
B	> 10 and < 15 seconds/vehicle
C	> 15 and < 25 seconds/vehicle
D	> 25 and < 35 seconds/vehicle
E	> 35 and < 50 seconds/vehicle
F	> 50 seconds/vehicle

Table 5 shows the existing levels of service that were calculated for the study intersections. Complete capacity calculations are included in the Appendix.

Table 5 – Existing Weekday Peak Hour Levels of Service

Intersection	Existing			
	AM Peak		PM Peak	
	LOS	Delay	LOS	Delay
Signalized Intersections				
Soldiers Pass Road/SR 89A				
Overall Intersection	B	16.2	B	17.7
Eastbound Left	B	14.4	B	15.3
Eastbound Through	B	13.7	B	11.7
Eastbound Through/Right	A	0.0	A	0.0
Westbound Left	A	0.0	A	0.0
Westbound Through	C	20.9	C	23.0
Westbound Through/Right	C	20.8	C	22.9
Northbound Left	A	0.0	A	0.0
Northbound Through/Right	A	0.0	A	0.0
Southbound Left	B	11.1	B	18.2
Southbound Through/Right	B	11.7	B	18.4
Un-Signalized Intersections				
Saddlerock Circle/SR 89A				
Eastbound Left	A	9.6	B	12.4
Westbound Left	B	10.7	B	11.2
Northbound Left/Through/Right	E	45.2	F	>120
Southbound Left/Through/Right	D	28.4	F	>120
Elk Road/SR 89A				
Westbound Left	B	10.4	B	11.3
Northbound Left/Right	C	20.3	D	26.4

Delay - seconds per vehicle

As shown in **Table 5**, the intersection of Saddlerock Circle/SR 89A currently experiences excessive delays for the northbound and southbound turning movements. Un-signalized minor approaches to high volume state highways tend to have their turning movements operate at LOS E or F in the weekday peak hours due to the limited number of sufficient gaps for vehicles to complete a turning movement.

The remaining study intersections currently operate at adequate LOS.

Future Traffic Operations Without Project

In order to assess the impacts of the project on future traffic operations, traffic projections were made for the opening year of 2021 and the horizon year of 2024.

ADOT historical data near the site shows increasing and decreasing traffic volumes in recent years. Using a conservative 2% annual compounded growth rate, 2021 and 2024 weekday peak hour traffic volumes without the project were estimated as shown in **Figures 8** and **9**.

Figure 8 – 2021 Weekday Peak Hour Traffic Volumes Without Project

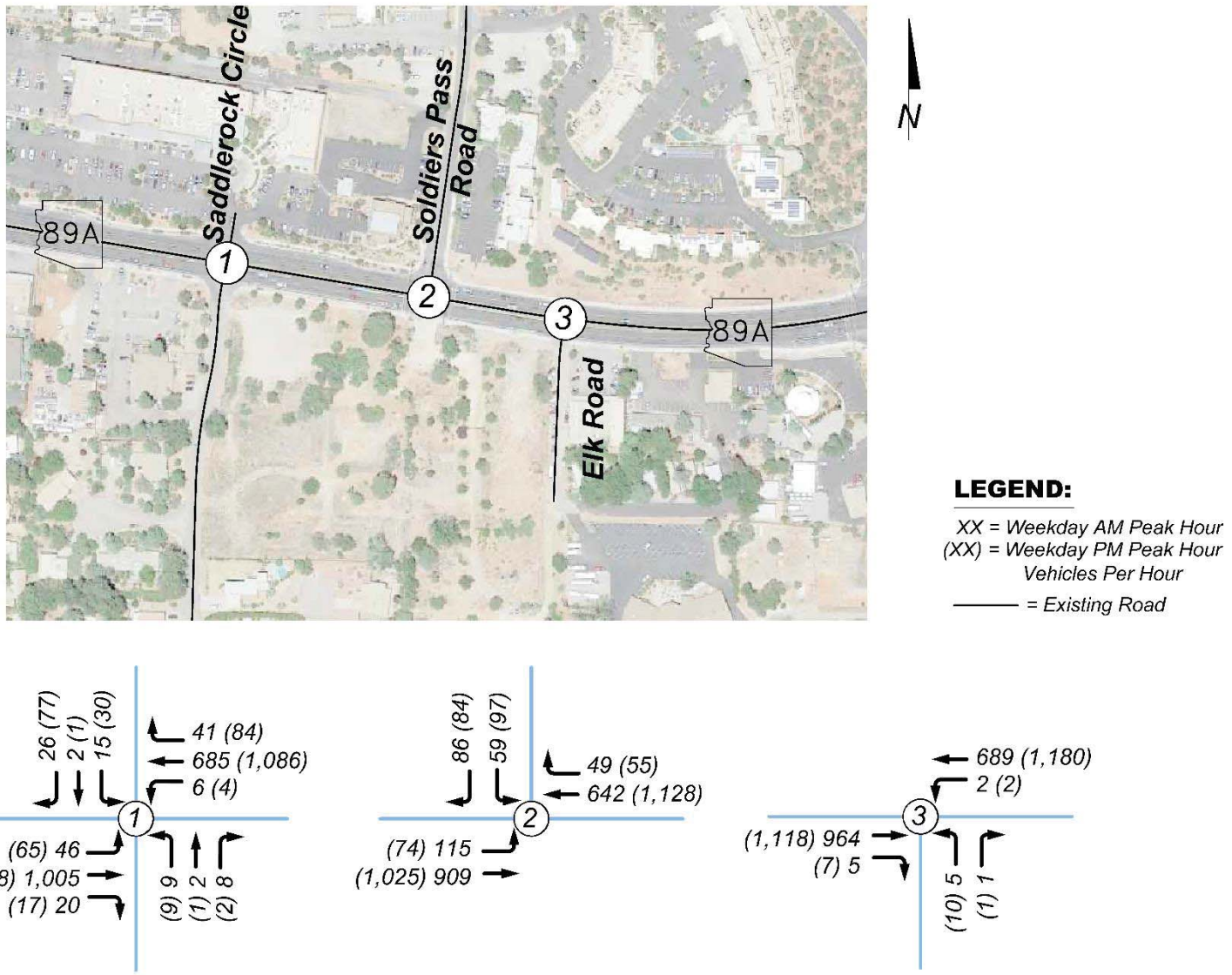
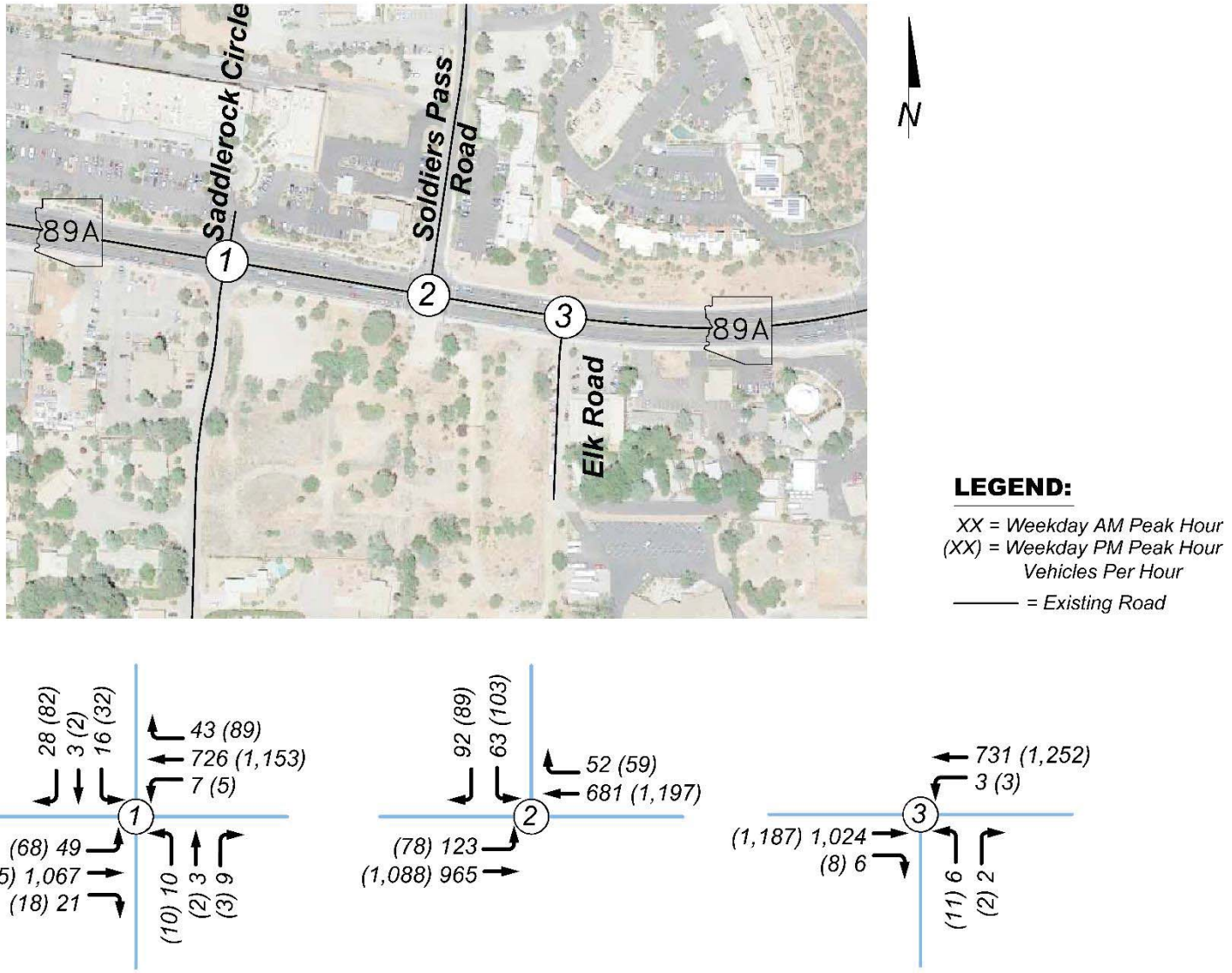


Figure 9 – 2024 Weekday Peak Hour Traffic Volumes Without Project



As with the current volumes, levels of service were calculated for each of the intersections in the study area for 2021 and 2024 without the project. Intersection levels of service for 2021 and 2024 without the project are shown in **Tables 6** and **7**. Complete capacity calculations are included in the Appendix.

Table 6 – 2021 Weekday Peak Hour Levels of Service Without Project

Intersection	2021 Without Project			
	AM Peak		PM Peak	
	LOS	Delay	LOS	Delay
Signalized Intersections				
Soldiers Pass Road/SR 89A				
Overall Intersection	B	16.3	B	18.3
Eastbound Left	B	14.5	B	16.0
Eastbound Through	B	13.7	B	11.7
Eastbound Through/Right	A	0.0	A	0.0
Westbound Left	A	0.0	A	0.0
Westbound Through	C	21.0	C	24.1
Westbound Through/Right	C	20.9	C	24.0
Northbound Left	A	0.0	A	0.0
Northbound Through/Right	A	0.0	A	0.0
Southbound Left	B	11.8	B	19.2
Southbound Through/Right	B	12.3	B	19.4
Un-Signalized Intersections				
Saddlerock Circle/SR 89A				
Eastbound Left	A	9.8	B	13.1
Westbound Left	B	11.0	B	11.5
Northbound Left/Through/Right	F	61.2	F	>120
Southbound Left/Through/Right	E	38.5	F	>120
Elk Road/SR 89A				
Westbound Left	B	10.6	B	11.5
Northbound Left/Right	C	20.0	D	27.0

Delay - seconds per vehicle

As shown in **Tables 6** and **7**, the existing delays at the intersection of Saddlerock Circle/SR 89A are expected to continue and worsen in 2021 and 2024 without traffic from the Saddle Rock Crossing site.

The remaining study intersections are anticipated to continue to operate at adequate LOS.

Table 7 – 2024 Weekday Peak Hour Levels of Service Without Project

Intersection	2024 Without Project			
	AM Peak		PM Peak	
	LOS	Delay	LOS	Delay
Signalized Intersections				
Soldiers Pass Road/SR 89A				
Overall Intersection	B	16.4	B	19.5
Eastbound Left	B	17.4	B	17.3
Eastbound Through	B	13.6	B	11.8
Eastbound Through/Right	A	0.0	A	0.0
Westbound Left	A	0.0	A	0.0
Westbound Through	C	21.1	C	26.1
Westbound Through/Right	C	21.1	C	26.1
Northbound Left	A	0.0	A	0.0
Northbound Through/Right	A	0.0	A	0.0
Southbound Left	B	12.6	C	20.3
Southbound Through/Right	B	13.3	C	20.6
Un-Signalized Intersections				
Saddlerock Circle/SR 89A				
Eastbound Left	B	10.0	B	13.9
Westbound Left	B	11.4	B	11.9
Northbound Left/Through/Right	F	88.2	F	>120
Southbound Left/Through/Right	F	53.1	F	>120
Elk Road/SR 89A				
Westbound Left	B	11.0	B	12.0
Northbound Left/Right	C	20.6	D	28.9

Delay - seconds per vehicle

Future Traffic Operations With Project

In order to assess the impacts of the project on future traffic operations, levels of service were calculated for each project intersection in 2021 and 2024, with the project. Weekday peak hour traffic volumes for 2021 and 2024 without the project were combined with the estimated trips generated by the project to yield weekday peak hour traffic volumes with the project. The weekday peak hour traffic volumes with the project in 2021 and 2024 are shown in **Figures 10** and **11**.

Weekday intersection levels of service for 2021 and 2024, with the project, were then calculated as shown in **Tables 8** and **9**. Complete capacity calculations are included in the Appendix.

Figure 10 – 2021 Weekday Peak Hour Traffic Volumes With Project

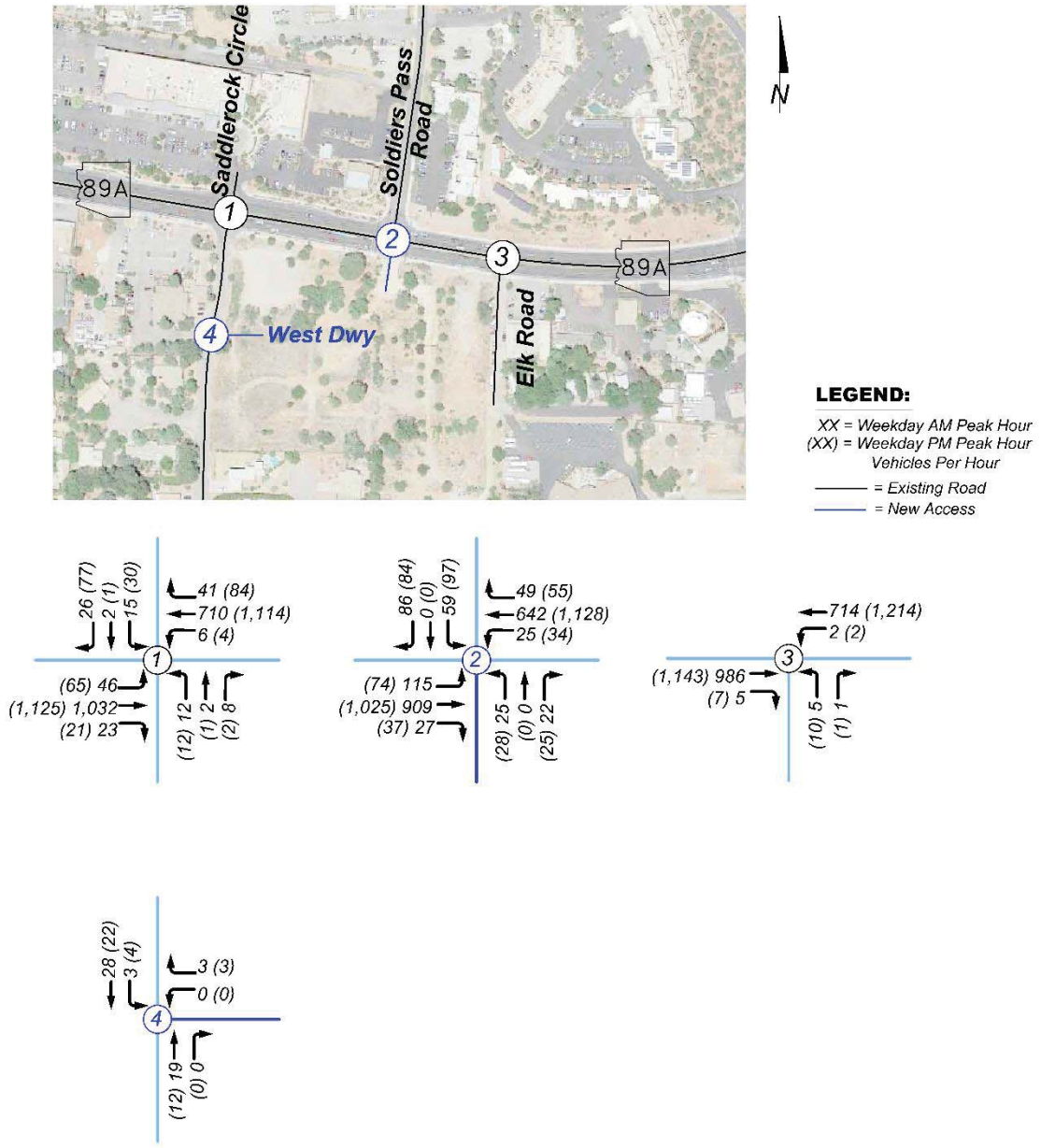


Figure 11 – 2024 Weekday Peak Hour Traffic Volumes With Project

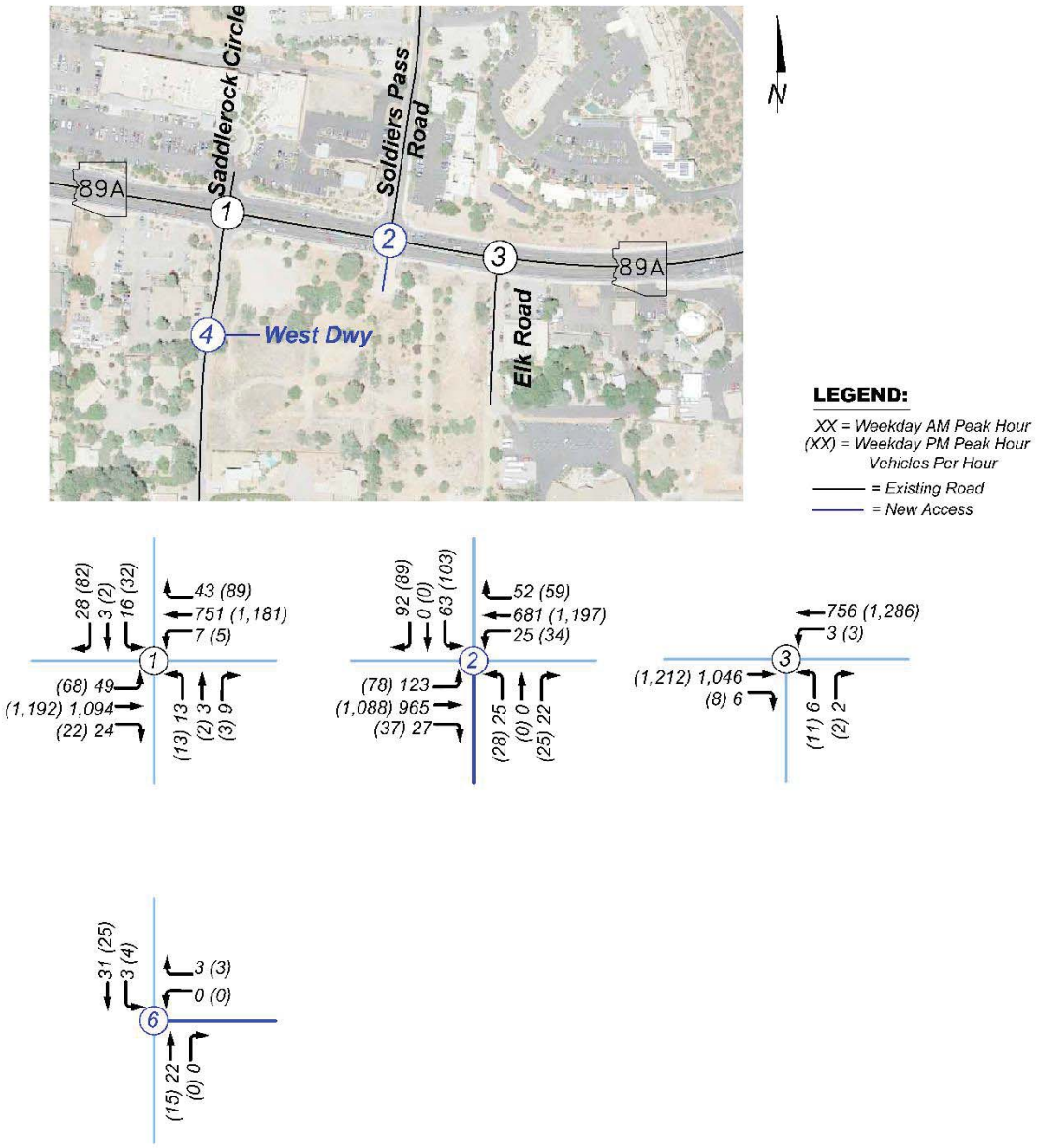


Table 8 – 2021 Weekday Peak Hour Levels of Service With Project

Intersection	2021 Without Project				2021 With Project			
	AM Peak		PM Peak		AM Peak		PM Peak	
	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
Signalized Intersections								
Soldiers Pass Road/SR 89A								
Overall Intersection	B	16.3	B	18.3	B	18.4	C	21.2
Eastbound Left	B	14.5	B	16.0	B	14.2	B	16.2
Eastbound Through	B	13.7	B	11.7	B	19.4	B	19.0
Eastbound Through/Right	A	0.0	A	0.0	B	19.3	B	19.0
Westbound Left	A	0.0	A	0.0	B	15.0	B	13.6
Westbound Through	C	21.0	C	24.1	B	19.3	C	24.1
Westbound Through/Right	C	20.9	C	24.0	B	19.3	C	24.0
Northbound Left	A	0.0	A	0.0	B	15.2	C	20.7
Northbound Through/Right	A	0.0	A	0.0	B	13.2	B	18.0
Southbound Left	B	11.8	B	19.2	B	14.5	C	20.7
Southbound Through/Right	B	12.3	B	19.4	B	14.3	B	19.4
Un-Signalized Intersections								
Saddlerock Circle/SR 89A								
Eastbound Left	A	9.8	B	13.1	A	9.9	B	13.4
Westbound Left	B	11.0	B	11.5	B	11.2	B	11.7
Northbound Left/Through/Right	F	61.2	F	>120	F	78.5	F	>120
Southbound Left/Through/Right	E	38.5	F	>120	E	41.8	F	>120
Elk Road/SR 89A								
Westbound Left	B	10.6	B	11.5	B	10.7	B	11.7
Northbound Left/Right	C	20.0	D	27.0	C	20.4	D	28.0
West Driveway/Saddlerock Circle								
Westbound Left/Right	N/A				A	8.4	A	8.4
Southbound Left/Through					A	7.3	A	7.3

Delay - seconds per vehicle

As shown in **Tables 8** and **9**, the intersection of Saddlerock Circle/SR 89A is expected to continue to operate at an inadequate LOS with the addition of traffic volumes associated with the proposed project.

All remaining study intersections are expected to operate at an adequate LOS.

Table 9 – 2024 Weekday Peak Hour Levels of Service With Project

Intersection	2024 Without Project				2024 With Project			
	AM Peak		PM Peak		AM Peak		PM Peak	
	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
Signalized Intersections								
Soldiers Pass Road/SR 89A								
Overall Intersection	B	16.4	B	19.5	B	18.7	C	22.6
Eastbound Left	B	17.4	B	17.3	B	14.2	B	17.3
Eastbound Through	B	13.6	B	11.8	B	19.6	B	19.8
Eastbound Through/Right	A	0.0	A	0.0	B	19.5	B	19.7
Westbound Left	A	0.0	A	0.0	B	15.0	B	13.8
Westbound Through	C	21.1	C	26.1	B	19.4	C	26.1
Westbound Through/Right	C	21.1	C	26.1	B	19.4	C	26.1
Northbound Left	A	0.0	A	0.0	B	16.3	C	22.0
Northbound Through/Right	A	0.0	A	0.0	B	14.0	B	19.0
Southbound Left	B	12.6	C	20.3	B	15.4	C	22.0
Southbound Through/Right	B	13.3	C	20.6	B	15.3	C	20.6
Un-Signalized Intersections								
Saddlerock Circle/SR 89A								
Eastbound Left	B	10.0	B	13.9	B	10.2	B	14.2
Westbound Left	B	11.4	B	11.9	B	11.6	B	12.2
Northbound Left/Through/Right	F	88.2	F	>120	F	117.5	F	>120
Southbound Left/Through/Right	F	53.1	F	>120	F	60.1	F	>120
Elk Road/SR 89A								
Westbound Left	B	11.0	B	12.0	B	11.1	B	12.2
Northbound Left/Right	C	20.6	D	28.9	C	21.1	D	29.7
West Driveway/Saddlerock Circle								
Westbound Left/Right	N/A				A	8.5	A	8.4
Southbound Left/Through					A	7.3	A	7.3

Delay - seconds per vehicle

Turn Lane Analysis

A key element of this traffic analysis is to determine if right and left turn lanes are required at the driveways providing direct access to the project. The need for turn lanes were based on the ADOT's *Traffic Guidelines and Processes 245 – Turn Lane Warrants* (TGP 245) at the intersection of Soldiers Pass Road/SR 89A. City of Sedona guidelines were reviewed to determine the need for auxiliary turn lanes for the proposed access points on Saddlerock Circle and Elk Road.

When needed, turn lanes remove the slowing turning traffic from the through traffic stream, improving capacity and reducing rear-end accidents. **Table 10** shows the locations that were evaluated for left and right turn lanes based on traffic volumes in 2024 with the project.

Table 10 – Turn Lane Warrants

Intersection	Direction	Turn Treatment Analyzed	Guidelines Applied	Turn Treatments Warranted?
Soldiers Pass Road/SR 89A	Eastbound	Right Turn Lane	ADOT	No
West Driveway/Saddlerock Circle	Southbound	Left Turn Lane	Sedona	No

As shown in **Table 10,** no additional auxiliary turn lanes are warranted at the access points serving the Saddle Rock Crossing site.

Crash Analysis

Crash history for the three study intersections was obtained from ADOT between 1 January 2015 to 31 December 2019. The results of the crash data review are shown in **Tables 11** and **12**.

Table 11 – Crash Analysis at Soldiers Pass Road/SR 89A

Year	Crash Type							Fatal	Injury	Crash Totals
	Angle	Left Turn	Rear-End	Sideswipe	Single Vehicle	Head On	Other			
2015			2						1	2
2016			2		1				1	3
2017	1	2	2	1			1		1	7
2018			1		1					2
2019			1						1	1
5-Year Total	**1**	**2**	**8**	**1**	**2**	**0**	**1**	**0**	**4**	**15**

Table 11 shows that fifteen (15) crashes have occurred at the intersection of Soldiers Pass Road/SR 89A in the five-year study analyzed. Of these crashes, eight (8) were rear-end type collisions. These types of crashes are often due to driver inattention, failure to slow or stop, and are common at signalized intersections.

Table 12 – Crash Analysis at Saddlerock Circle/SR 89A

Year	Crash Type							Fatal	Injury	Crash Totals
	Angle	Left Turn	Rear-End	Sideswipe	Single Vehicle	Head On	Other			
2015		1								1
2016			1							1
2017	1									1
2018										0
2019										0
5-Year Total	**1**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**3**

As shown in **Table 12**, there were three (3) reported collisions with no injuries at the intersection of Saddlerock Circle/SR 89A within the five-year study period.

No crashes were recorded at the intersection Elk Road/SR 89A within the study period analyzed.

It is possible that other crashes occurred in the area where the Police Department was not contacted and no official record of these crashes exists.

Mitigation

The intersection of Saddlerock Circle/SR 89A currently experiences excessive delays for the northbound and southbound turning movements. Un-signalized minor approaches to high volume state highways tend to have their turning movements operate at LOS E or F in the weekday peak hours due to the limited number of sufficient gaps for vehicles to complete a turning movement. The installation of traffic signal would be expected to alleviate these delays. **Table 13** shows the improvement in LOS with the installation of a traffic signal.

Table 13 – Mitigation Measures

Intersection	Mitigation Measure	2024 Study Year											
		Without Project				With Project				With Project Mitigation			
		AM Peak		PM Peak		AM Peak		PM Peak		AM Peak		PM Peak	
		LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
Un-Signalized Intersections													
Saddlerock Circle/SR 89A	Install Traffic Signal												
Overall Intersection		N/A		N/A		N/A		N/A		A	7.4	A	8.6
Eastbound Left		B	10.0	B	13.9	B	10.2	B	14.2	A	4.9	A	6.8
Eastbound Through		N/A		N/A		N/A		N/A		A	7.2	A	7.0
Eastbound Through/Right										A	7.2	A	7.0
Westbound Left		B	11.4	B	11.9	B	11.6	B	12.2	A	5.8	A	6.1
Westbound Through		N/A		N/A		N/A		N/A		A	7.1	A	9.0
Westbound Right										A	5.5	A	5.9
Northbound Left/Through/Right		F	88.2	F	>120	F	117.5	F	>120	B	16.7	C	20.5
Southbound Left/Through/Right		F	53.1	F	>120	F	60.1	F	>120	B	17.2	C	23.2

Delay - seconds per vehicle

Due to the proximity of the intersection of Saddlerock Circle/SR 89A to the existing signalized intersection of Soldiers Pass Road/SR 89A, the installation of an additional traffic signal is not recommended. Traffic signals, when spaced too closely, often have a negative impact on traffic flow and can be difficult to coordinate. If excessive delays occur, drivers may, and will be able to, re-route themselves to the signalized intersection at Soldiers Pass Road/SR 89A to complete their left turning movements.

Conclusion

When fully completed, the proposed Saddle Rock Crossing project is predicted to generate an additional 1,498 vehicle trips per day (vtpd) on weekdays to the adjacent street system from the new project site. Fifty percent of these new trips (749 vehicle trips) will be into the project and fifty percent will be out of the project.

The intersection of Saddlerock Circle/SR 89A currently experiences excessive delays for the northbound and southbound turning movements. Un-signalized minor approaches to high volume state highways tend to have their turning movements operate at LOS E or F in the weekday peak hours due to the limited number of sufficient gaps for vehicles to complete a turning movement.

The remaining study intersections currently operate at adequate LOS.

Motorists on Saddlerock Circle travel at an average speed of 23 to 24 mph with a northbound-southbound average of 69.3% of vehicles traveling under 25 mph.

The existing delays at the intersection of Saddlerock Circle/SR 89A are expected to continue and worsen in 2021 and 2024 without traffic from the Saddle Rock Crossing site.

The remaining study intersections are anticipated to continue to operate at adequate LOS.

The intersection of Saddlerock Circle/SR 89A is expected to continue to operate at an inadequate LOS with the addition of traffic volumes associated with the proposed project.

All remaining study intersections are expected to operate at an adequate LOS.

No additional auxiliary turn lanes are warranted at the access points serving the Saddle Rock Crossing site.

Based on crash data retrieved from the ADOT database, 15 crashes have occurred at the intersection of Soldiers Pass Road/SR 89A in the five-year study analyzed. Of these crashes, eight were rear-end type collisions. These types of crashes are often due to driver inattention, failure to slow or stop, and are common at signalized intersections.

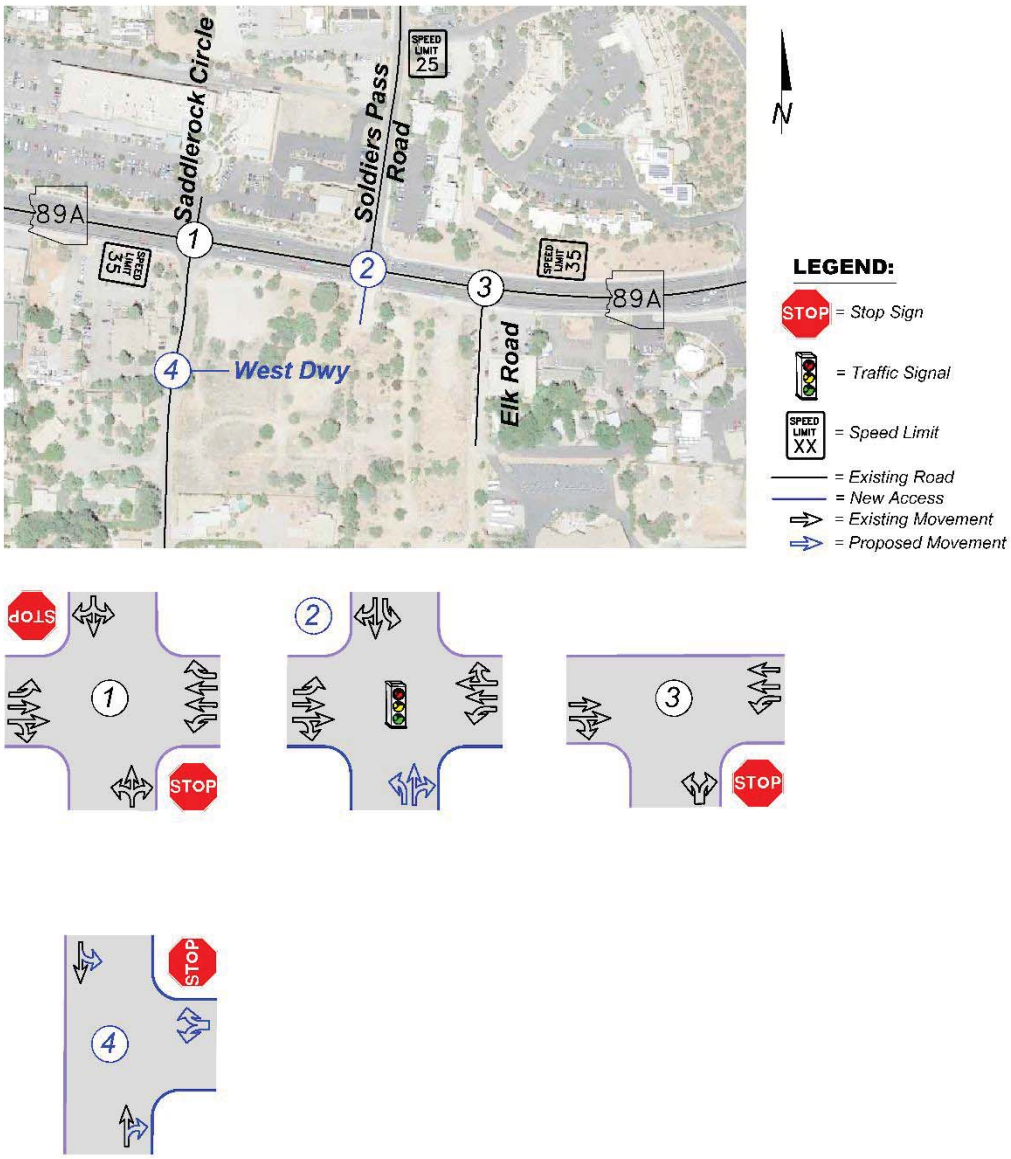
With limited crashes at the remaining study intersections, no specific crash trends can be identified.

The intersection of Saddlerock Circle/SR 89A currently experiences excessive delays for the northbound and southbound turning movements. Un-signalized minor approaches to high volume state highways tend to have their turning movements operate at LOS E or F in the weekday peak hours due to the limited number of sufficient gaps for vehicles to complete a turning movement. The installation of traffic signal would be expected to alleviate these delays.

However, due to the proximity of the intersection of Saddlerock Circle/SR 89A to the existing signalized intersection of Soldiers Pass Road/SR 89A, the installation of an additional traffic signal is not recommended. Traffic signals, when spaced too closely, often have a negative impact on traffic flow and can be difficult to coordinate. If excessive delays occur, drivers may, and will be able to, re-route themselves to the signalized intersection at Soldiers Pass Road/SR 89A to complete their left turning movements.

Proposed lane configurations and traffic control are shown in **Figure 12**.

Figure 12 – Proposed Lane Configurations and Traffic Control



SADDLE ROCK CROSSING
SOLDIERS PASS ROAD/STATE ROUTE 89A
TRAFFIC IMPACT ANALYSIS

APPENDIX

Traffic Counts

Trip Generation Calculations

Capacity Calculations

Approved ADOT TIA Presubmittal Form

SADDLE ROCK CROSSING
SOLDIERS PASS ROAD/STATE ROUTE 89A
TRAFFIC IMPACT ANALYSIS

APPENDIX

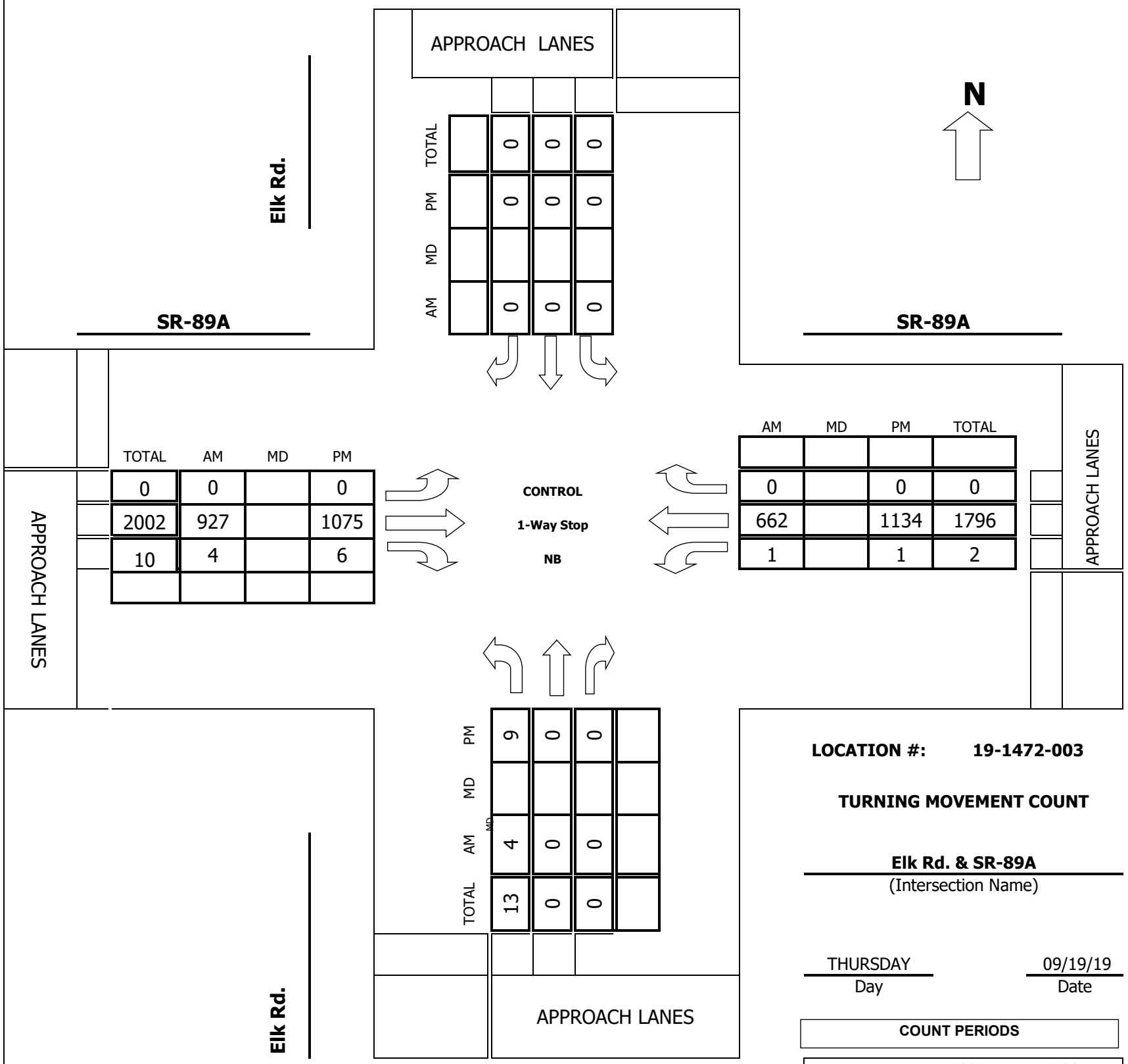
Traffic Counts

Intersection Turning Movement
Prepared by:

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

Project #: 19-1472-003

TMC SUMMARY OF Elk Rd. & SR-89A



LOCATION #: 19-1472-003

TURNING MOVEMENT COUNT

Elk Rd. & SR-89A
(Intersection Name)

THURSDAY (Day) 09/19/19 (Date)

COUNT PERIODS			
AM	700AM	-	900AM
NOON		-	
PM	400PM	-	600PM

AM PEAK HOUR 800 AM

NOON PEAK HOUR

PM PEAK HOUR 400 PM

Intersection Turning Movement
Prepared by:

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

veracitytrafficgroup

N-S STREET:	Elk Rd.	DATE:	09/19/19	LOCATION:	Sedona
E-W STREET:	SR-89A	DAY:	THURSDAY	PROJECT#	19-1472-003

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	0	0	0	2	0	0	2	0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	0	0	0	0	0	0	0	116	0	0	93	0	209
7:15 AM	2	0	1	0	0	0	0	141	1	0	149	0	294
7:30 AM	3	0	0	0	0	0	0	163	1	0	198	0	365
7:45 AM	1	0	0	0	0	0	0	198	0	1	210	0	410
8:00 AM	2	0	0	0	0	0	0	220	0	0	157	0	379
8:15 AM	1	0	0	0	0	0	0	236	2	0	152	0	391
8:30 AM	1	0	0	0	0	0	0	237	2	0	164	0	404
8:45 AM	0	0	0	0	0	0	0	234	0	1	189	0	424
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													

TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
Volumes	10	0	1	0	0	0	0	1545	6	2	1312	0	2876
Approach %	90.91	0.00	9.09	####	####	####	0.00	99.61	0.39	0.15	99.85	0.00	
App/Depart	11	/	0	0	/	8	1551	/	1546	1314	/	1322	

AM Peak Hr Begins at: 800 AM

PEAK													
Volumes	4	0	0	0	0	0	0	927	4	1	662	0	1598
Approach %	100.00	0.00	0.00	####	####	####	0.00	99.57	0.43	0.15	99.85	0.00	

PEAK HR. FACTOR:	0.500	0.000	0.974	0.872	0.942

CONTROL: 1-Way Stop (NB)
COMMENT 1:
GPS: 34.862524, -111.782431

Intersection Turning Movement

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

veracitytrafficgroup

N-S STREET:	Elk Rd. 0	DATE:	09/19/19	LOCATION:	Sedona
E-W STREET:	SR-89A	DAY:	THURSDAY	PROJECT#	19-1472-003

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	0	0	0	2	0	0	2	0	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM	1	0	0	0	0	0	0	261	1	0	278	0	541
4:15 PM	2	0	0	0	0	0	0	269	2	1	263	0	537
4:30 PM	3	0	0	0	0	0	0	273	3	0	308	0	587
4:45 PM	3	0	0	0	0	0	0	272	0	0	285	0	560
5:00 PM	0	0	1	0	0	0	0	281	2	0	239	0	523
5:15 PM	0	0	1	0	0	0	0	246	0	0	241	0	488
5:30 PM	1	0	0	0	0	0	0	235	0	0	217	0	453
5:45 PM	0	0	0	0	0	0	0	207	0	0	230	0	437
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													

TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
Volumes	10	0	2	0	0	0	0	2044	8	1	2061	0	4126
Approach %	83.33	0.00	16.67	####	####	####	0.00	99.61	0.39	0.05	99.95	0.00	
App/Depart	12	/	0	0	/	9	2052	/	2046	2062	/	2071	

PM Peak Hr Begins at: 400 PM

PEAK													
Volumes	9	0	0	0	0	0	0	1075	6	1	1134	0	2225
Approach %	100.00	0.00	0.00	####	####	####	0.00	99.44	0.56	0.09	99.91	0.00	

PEAK HR. FACTOR:	0.750	0.000	0.979	0.921	0.948

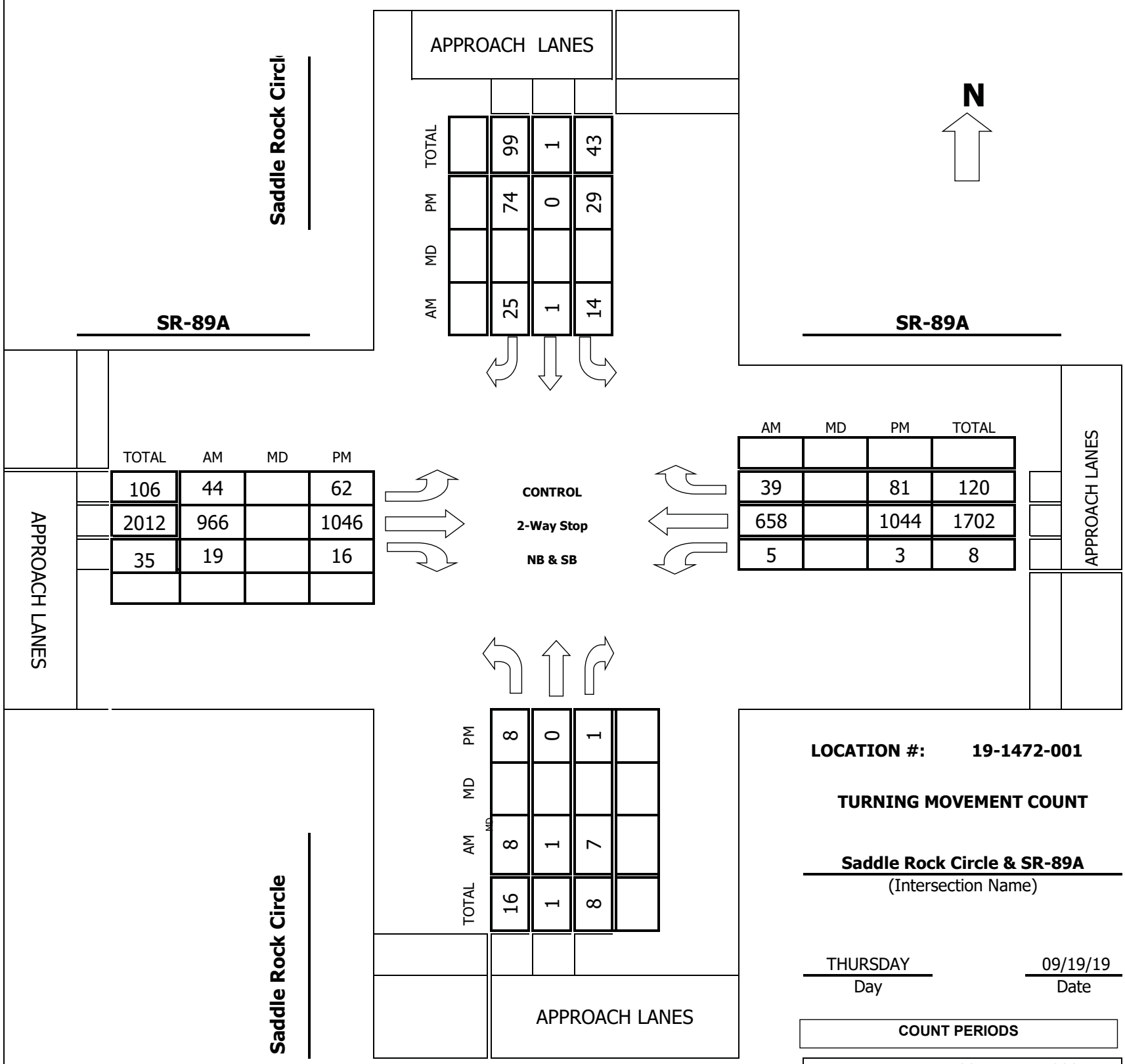
CONTROL: 1-Way Stop (NB)
COMMENT 1: 0
GPS: 34.862524, -111.782431

Intersection Turning Movement
Prepared by:

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

Project #: 19-1472-001

TMC SUMMARY OF Saddle Rock Circle & SR-89A



LOCATION #: 19-1472-001

TURNING MOVEMENT COUNT

Saddle Rock Circle & SR-89A
(Intersection Name)

THURSDAY (Day) 09/19/19 (Date)

COUNT PERIODS			
AM	700AM	-	900AM
NOON		-	
PM	400PM	-	600PM

AM PEAK HOUR 800 AM

NOON PEAK HOUR

PM PEAK HOUR 415 PM

Intersection Turning Movement
Prepared by:

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

veracitytrafficgroup

N-S STREET:	Saddle Rock Circle	DATE:	09/19/19	LOCATION:	Sedona
E-W STREET:	SR-89A	DAY:	THURSDAY	PROJECT#	19-1472-001

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	2	0	0	2	1	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	1	0	0	1	0	2	6	117	0	0	91	1	219
7:15 AM	1	0	0	3	0	5	10	153	1	0	138	6	317
7:30 AM	1	0	1	6	0	4	6	176	2	0	159	4	359
7:45 AM	6	0	2	1	0	12	7	192	4	1	196	8	429
8:00 AM	0	0	1	4	0	8	12	230	5	1	150	14	425
8:15 AM	3	0	0	5	0	3	7	238	4	1	157	8	426
8:30 AM	2	1	4	2	1	5	13	248	7	2	161	9	455
8:45 AM	3	0	2	3	0	9	12	250	3	1	190	8	481
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													

TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
Volumes	17	1	10	25	1	48	73	1604	26	6	1242	58	3111
Approach %	60.71	3.57	35.71	33.78	1.35	64.86	4.29	94.19	1.53	0.46	95.10	4.44	
App/Depart	28	/	132	74	/	33	1703	/	1639	1306	/	1307	

AM Peak Hr Begins at: 800 AM

PEAK													
Volumes	8	1	7	14	1	25	44	966	19	5	658	39	1787
Approach %	50.00	6.25	43.75	35.00	2.50	62.50	4.28	93.88	1.85	0.71	93.73	5.56	
PEAK HR. FACTOR:		0.571			0.833			0.960			0.882		0.929

CONTROL:	2-Way Stop (NB & SB)
COMMENT 1:	
GPS:	34.862792, -111.784480

Intersection Turning Movement

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

veracitytrafficgroup

N-S STREET:	Saddle Rock Circle 0	DATE:	09/19/19	LOCATION:	Sedona
E-W STREET:	SR-89A	DAY:	THURSDAY	PROJECT#	19-1472-001

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	2	0	0	2	1	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM	5	0	4	6	0	12	15	243	4	2	260	20	571
4:15 PM	3	0	0	3	0	13	9	260	7	0	242	20	557
4:30 PM	2	0	1	10	0	21	18	260	2	0	295	24	633
4:45 PM	2	0	0	7	0	17	19	256	4	2	273	23	603
5:00 PM	1	0	0	9	0	23	16	270	3	1	234	14	571
5:15 PM	0	0	2	4	0	16	15	245	2	1	228	24	537
5:30 PM	0	0	1	6	0	17	19	227	4	1	205	16	496
5:45 PM	1	0	1	6	0	12	11	179	4	3	231	8	456
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													

TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
Volumes	14	0	9	51	0	131	122	1940	30	10	1968	149	4424
Approach %	60.87	0.00	39.13	28.02	0.00	71.98	5.83	92.73	1.43	0.47	92.52	7.01	
App/Depart	23	/	271	182	/	40	2092	/	2000	2127	/	2113	

PM Peak Hr Begins at: 415 PM

PEAK													
Volumes	8	0	1	29	0	74	62	1046	16	3	1044	81	2364
Approach %	88.89	0.00	11.11	28.16	0.00	71.84	5.52	93.06	1.42	0.27	92.55	7.18	
PEAK HR. FACTOR:	0.750			0.805			0.972			0.884			0.934

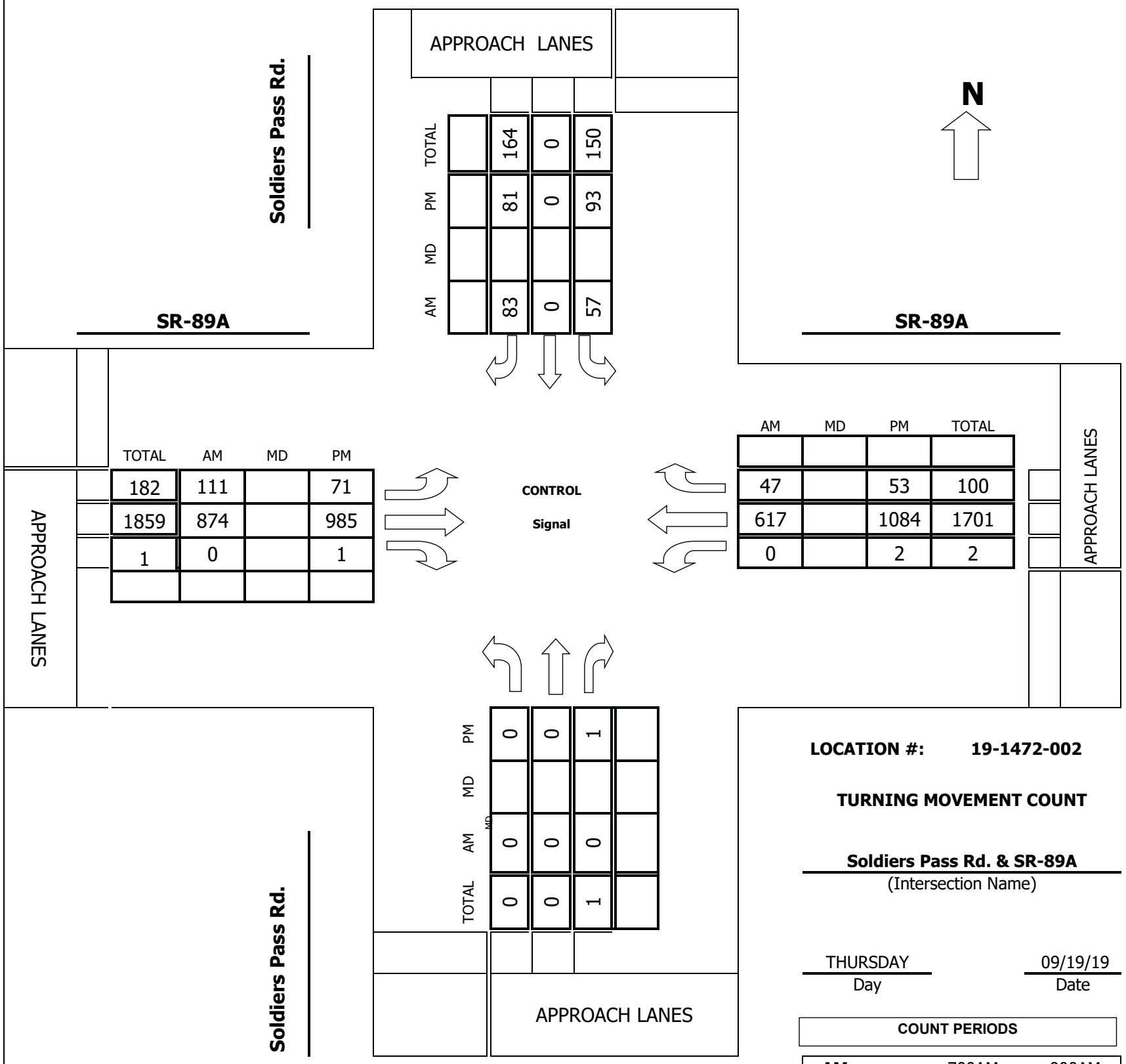
CONTROL:	2-Way Stop (NB & SB)
COMMENT 1:	0
GPS:	34.862792, -111.784480

Intersection Turning Movement
Prepared by:

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

Project #: 19-1472-002

TMC SUMMARY OF Soldiers Pass Rd. & SR-89A



LOCATION #: 19-1472-002

TURNING MOVEMENT COUNT

Soldiers Pass Rd. & SR-89A
(Intersection Name)

THURSDAY (Day) 09/19/19 (Date)

COUNT PERIODS

AM	700AM	-	900AM
NOON		-	
PM	400PM	-	600PM

AM PEAK HOUR 800 AM

NOON PEAK HOUR

PM PEAK HOUR 400 PM

Intersection Turning Movement
Prepared by:

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

veracitytrafficgroup

N-S STREET:	Soldiers Pass Rd.	DATE:	09/19/19	LOCATION:	Sedona
E-W STREET:	SR-89A	DAY:	THURSDAY	PROJECT#	19-1472-002

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	1	1	0	1	2	0	1	2	0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	0	0	0	7	0	13	15	106	0	0	81	13	235
7:15 AM	0	0	0	9	0	12	21	134	0	0	129	24	329
7:30 AM	0	0	0	21	0	15	44	141	0	0	148	54	423
7:45 AM	0	0	0	23	0	16	21	173	0	0	191	19	443
8:00 AM	0	0	0	12	0	18	27	207	0	0	146	12	422
8:15 AM	0	0	0	20	0	20	26	216	0	0	145	7	434
8:30 AM	0	0	0	11	0	22	26	227	0	0	149	15	450
8:45 AM	0	0	0	14	0	23	32	224	0	0	177	13	483
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													

TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
Volumes	0	0	0	117	0	139	212	1428	0	0	1166	157	3219
Approach %	####	####	####	45.70	0.00	54.30	12.93	87.07	0.00	0.00	88.13	11.87	
App/Depart	0	/	369	256	/	0	1640	/	1545	1323	/	1305	

AM Peak Hr Begins at: 800 AM

PEAK													
Volumes	0	0	0	57	0	83	111	874	0	0	617	47	1789
Approach %	####	####	####	40.71	0.00	59.29	11.27	88.73	0.00	0.00	92.92	7.08	
PEAK HR. FACTOR:		0.000			0.875			0.962			0.874		0.926

CONTROL: Signal
COMMENT 1:
GPS: 34.862633, -111.783251

Intersection Turning Movement

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

veracitytrafficgroup

N-S STREET:	Soldiers Pass Rd. 0	DATE:	09/19/19	LOCATION:	Sedona
E-W STREET:	SR-89A	DAY:	THURSDAY	PROJECT#	19-1472-002

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	1	1	0	1	2	0	1	2	0	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM	0	0	0	20	0	18	16	239	1	0	265	13	572
4:15 PM	0	0	0	27	0	22	21	243	0	1	243	20	577
4:30 PM	0	0	1	25	0	19	22	251	0	1	299	10	628
4:45 PM	0	0	0	21	0	22	12	252	0	0	277	10	594
5:00 PM	0	0	0	17	0	23	16	265	0	0	228	10	559
5:15 PM	0	0	0	13	0	20	17	233	0	0	235	4	522
5:30 PM	0	0	0	12	0	17	12	222	1	0	207	10	481
5:45 PM	0	0	2	29	0	24	14	173	1	1	220	7	471
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													

TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
Volumes	0	0	3	164	0	165	130	1878	3	3	1974	84	4404
Approach %	0.00	0.00	100.00	49.85	0.00	50.15	6.46	93.39	0.15	0.15	95.78	4.08	
App/Depart	3	/	214	329	/	6	2011	/	2045	2061	/	2139	

PM Peak Hr Begins at: 400 PM

PEAK													
Volumes	0	0	1	93	0	81	71	985	1	2	1084	53	2371
Approach %	0.00	0.00	100.00	53.45	0.00	46.55	6.72	93.19	0.09	0.18	95.17	4.65	

PEAK HR. FACTOR:	0.250	0.888	0.968	0.919	0.944

CONTROL:	Signal
COMMENT 1:	0
GPS:	34.862633, -111.783251

Field Data Services of Arizona

31894 Whitetail Ln.
Temecula, CA 92592
520.316.6745

Site Code: Thurs 09/19/19
Station ID: 19-1472-004
Saddle Rock Cir. north of June Bug Cir.
34.862087, -111.784590
Latitude: 0' 0.0000 Undefined

Northbound

Start Time	0 10	11 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 71	Total	Average (Mean)	85th Percent
09/19/19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
05:00	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2	28	29
06:00	0	**1**	1	5	3	1	0	0	0	0	0	0	0	0	11	24	28
07:00	**1**	1	1	**6**	2	1	0	0	0	0	0	0	0	0	12	22	28
08:00	0	0	4	6	5	0	0	0	0	0	0	0	0	0	15	23	27
09:00	0	0	4	3	**7**	**3**	0	0	0	0	0	0	0	0	17	26	30
10:00	0	1	**8**	6	5	0	0	0	0	0	0	0	0	0	**20**	22	27
11:00	0	0	1	2	2	0	0	0	0	0	0	0	0	0	5	24	28
12 PM	0	0	3	5	3	1	0	0	0	0	0	0	0	0	12	24	28
13:00	**1**	0	1	5	1	0	0	0	0	0	0	0	0	0	8	21	24
14:00	0	0	2	**6**	3	1	0	0	0	0	0	0	0	0	12	24	28
15:00	0	0	2	6	**5**	**2**	0	0	0	0	0	0	0	0	**15**	25	29
16:00	0	0	**4**	6	4	1	0	0	0	0	0	0	0	0	15	24	28
17:00	0	0	1	1	1	1	0	0	0	0	0	0	0	0	4	25	32
18:00	0	**1**	1	4	1	1	0	0	0	0	0	0	0	0	8	23	28
19:00	0	1	2	0	2	0	0	0	0	0	0	0	0	0	5	21	28
20:00	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	28	29
21:00	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	18	19
22:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	13	14
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
Total	2	6	36	61	47	12	0	0	0	0	0	0	0	0	164		
Percent	1.2%	3.7%	22.0%	37.2%	28.7%	7.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	07:00	06:00	10:00	07:00	09:00	09:00									10:00		
Vol.	1	1	8	6	7	3									20		
PM Peak	13:00	18:00	16:00	14:00	15:00	15:00									15:00		
Vol.	1	1	4	6	5	2									15		
Total	2	6	36	61	47	12	0	0	0	0	0	0	0	0	164		
Percent	1.2%	3.7%	22.0%	37.2%	28.7%	7.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			

15th Percentile :	17 MPH
50th Percentile :	23 MPH
85th Percentile :	28 MPH
95th Percentile :	31 MPH

Statistics

10 MPH Pace Speed :	21-30 MPH
Number in Pace :	108
Percent in Pace :	65.9%
Number of Vehicles > 25 MPH :	59
Percent of Vehicles > 25 MPH :	36.0%
Mean Speed(Average) :	24 MPH

Field Data Services of Arizona
31894 Whitetail Ln.
Temecula, CA 92592
520.316.6745

Site Code: Thurs 09/19/19
Station ID: 19-1472-004
Saddle Rock Cir. north of June Bug Cir.
34.862087, -111.784590
Latitude: 0' 0.0000 Undefined

Southbound

Start Time	0 10	11 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 71	Total	Average (Mean)	85th Percent
09/19/19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
03:00	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	28	29
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
05:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
06:00	0	0	1	0	1	0	0	0	0	0	0	0	0	0	2	23	28
07:00	0	0	3	3	2	0	0	0	0	0	0	0	0	0	8	22	27
08:00	0	0	**8**	8	**8**	0	0	0	0	0	0	0	0	0	**24**	23	27
09:00	0	1	3	2	3	0	0	0	0	0	0	0	0	0	9	22	27
10:00	0	1	4	4	1	0	0	0	0	0	0	0	0	0	10	20	24
11:00	0	**2**	3	**11**	5	**1**	0	0	0	0	0	0	0	0	22	23	27
12 PM	0	0	2	11	4	**1**	0	0	0	0	0	0	0	0	18	24	27
13:00	0	0	1	**12**	4	0	0	0	0	0	0	0	0	0	17	24	26
14:00	0	**1**	4	6	5	1	0	0	0	0	0	0	0	0	17	23	28
15:00	0	1	2	10	0	0	0	0	0	0	0	0	0	0	13	21	24
16:00	0	1	3	8	**7**	0	0	0	0	0	0	0	0	0	**19**	24	27
17:00	0	0	4	7	5	1	0	0	0	0	0	0	0	0	17	24	28
18:00	0	1	**5**	4	1	0	**1**	0	0	0	0	0	0	0	12	22	25
19:00	0	0	2	10	2	0	0	0	0	0	0	0	0	0	14	23	24
20:00	0	0	0	2	0	1	0	0	0	0	0	0	0	0	3	26	32
21:00	0	1	0	2	1	0	0	0	0	0	0	0	0	0	4	22	27
22:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	13	14
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
Total	0	10	45	100	50	5	1	0	0	0	0	0	0	0	211		
Percent	0.0%	4.7%	21.3%	47.4%	23.7%	2.4%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak		11:00	08:00	11:00	08:00	11:00									08:00		
Vol.		2	8	11	8	1									24		
PM Peak		14:00	18:00	13:00	16:00	12:00	18:00								16:00		
Vol.		1	5	12	7	1	1								19		
Total	0	10	45	100	50	5	1	0	0	0	0	0	0	0	211		
Percent	0.0%	4.7%	21.3%	47.4%	23.7%	2.4%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			

15th Percentile :	17 MPH
50th Percentile :	22 MPH
85th Percentile :	27 MPH
95th Percentile :	29 MPH

Statistics

10 MPH Pace Speed :	21-30 MPH
Number in Pace :	150
Percent in Pace :	71.1%
Number of Vehicles > 25 MPH :	56
Percent of Vehicles > 25 MPH :	26.5%
Mean Speed(Average) :	23 MPH

Field Data Services of Arizona
31894 Whitetail Ln.
Temecula, CA 92592
520.316.6745

Site Code: Thurs 09/19/19
Station ID: 19-1472-004
Saddle Rock Cir. north of June Bug Cir.
34.862087, -111.784590
Latitude: 0' 0.0000 Undefined

Northbound, Southbound

Start Time	0 10	11 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 71	Total	Average (Mean)	85th Percent
09/19/19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
03:00	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	28	29
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
05:00	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2	28	29
06:00	0	1	2	5	4	1	0	0	0	0	0	0	0	0	13	24	28
07:00	**1**	1	4	9	4	1	0	0	0	0	0	0	0	0	20	22	27
08:00	0	0	**12**	**14**	**13**	0	0	0	0	0	0	0	0	0	**39**	23	27
09:00	0	1	7	5	10	**3**	0	0	0	0	0	0	0	0	26	24	29
10:00	0	**2**	12	10	6	0	0	0	0	0	0	0	0	0	30	21	26
11:00	0	2	4	13	7	1	0	0	0	0	0	0	0	0	27	23	27
12 PM	0	0	5	16	7	**2**	0	0	0	0	0	0	0	0	30	24	28
13:00	**1**	0	2	**17**	5	0	0	0	0	0	0	0	0	0	25	23	26
14:00	0	1	6	12	8	2	0	0	0	0	0	0	0	0	29	24	28
15:00	0	1	4	16	5	2	0	0	0	0	0	0	0	0	28	24	27
16:00	0	1	**7**	14	**11**	1	0	0	0	0	0	0	0	0	**34**	24	28
17:00	0	0	5	8	6	2	0	0	0	0	0	0	0	0	21	24	29
18:00	0	**2**	6	8	2	1	**1**	0	0	0	0	0	0	0	20	22	27
19:00	0	1	4	10	4	0	0	0	0	0	0	0	0	0	19	22	26
20:00	0	0	0	2	1	1	0	0	0	0	0	0	0	0	4	27	32
21:00	0	1	1	2	1	0	0	0	0	0	0	0	0	0	5	21	26
22:00	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2	13	14
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
Total	2	16	81	161	97	17	1	0	0	0	0	0	0	0	375		
Percent	0.5%	4.3%	21.6%	42.9%	25.9%	4.5%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	07:00	10:00	08:00	08:00	08:00	09:00									08:00		
Vol.	1	2	12	14	13	3									39		
PM Peak	13:00	18:00	16:00	13:00	16:00	12:00	18:00								16:00		
Vol.	1	2	7	17	11	2	1								34		
Total	2	16	81	161	97	17	1	0	0	0	0	0	0	0	375		
Percent	0.5%	4.3%	21.6%	42.9%	25.9%	4.5%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			

15th Percentile :	17 MPH
50th Percentile :	22 MPH
85th Percentile :	28 MPH
95th Percentile :	29 MPH

Statistics

10 MPH Pace Speed :	21-30 MPH
Number in Pace :	258
Percent in Pace :	68.8%
Number of Vehicles > 25 MPH :	115
Percent of Vehicles > 25 MPH :	30.7%
Mean Speed(Average) :	23 MPH

SADDLE ROCK CROSSING
SOLDIERS PASS ROAD/STATE ROUTE 89A
TRAFFIC IMPACT ANALYSIS

APPENDIX

Trip Generation Calculations

Multifamily Housing (Low Rise)

LAND USE: 40 Dwelling Units Multifamily Housing (Low Rise)

TRIP GENERATION CALCULATIONS ARE BASED ON THE INSTITUTE OF TRANSPORTATION ENGINEERS' TRIP GENERATION, 10TH EDITION. THE ITE LAND USE CODE IS Multifamily Housing (Low Rise) (220), General Urban/Suburban

Weekday

Fitted Curve T=7.56(X) - 40.86
Where X = 40 Units

	T =	**262 VTPD**
ENTER:	(0.5)*(262) =	**131 VTPD**
EXIT:	(0.5)*(262) =	**131 VTPD**

AM PEAK HOUR (ONE HOUR BETWEEN 7 AND 9 AM)

Fitted Curve Ln(T) = 0.95Ln(X) - 0.51
Where X = 40 Units

	T =	**20 VPH**
ENTER:	(0.23)*(20) =	**5 VPH**
EXIT:	(0.77)*(20) =	**15 VPH**

PM PEAK HOUR (ONE HOUR BETWEEN 4 AND 6 PM)

Fitted Curve Ln(T) = 0.89Ln(X) - 0.02
Where X = 40 Units

	T =	**26 VPH**
ENTER:	(0.63)*(26) =	**16 VPH**
EXIT:	(0.37)*(26) =	**10 VPH**

*where, T = trip ends

TRIP GENERATION SUMMARY

WEEKDAY	**262 VTPD**
AM PEAK HOUR (ONE HOUR BETWEEN 7 AND 9 AM)	**20 VPH**
PM PEAK HOUR (ONE HOUR BETWEEN 4 AND 6 PM)	**26 VPH**

Hotel

LAND USE: 114-Room Hotel

TRIP GENERATION CALCULATIONS ARE BASED ON THE INSTITUTE OF TRANSPORTATION ENGINEERS' TRIP GENERATION, 10TH EDITION. THE ITE LAND USE CODE IS Hotel (310), General Urban/Suburban

Weekday

Fitted Curve T=11.29(X) - 426.97
Where X = 114 Rooms

		T =	**862 VTPD**
ENTER:	(0.5)*(862) =		**431 VTPD**
EXIT:	(0.5)*(862) =		**431 VTPD**

AM PEAK HOUR (ONE HOUR BETWEEN 7 AND 9 AM)

Fitted Curve T=0.50(X) - 5.34
Where X = 114 Rooms

		T =	**52 VPH**
ENTER:	(0.59)*(52) =		**31 VPH**
EXIT:	(0.41)*(52) =		**21 VPH**

PM PEAK HOUR (ONE HOUR BETWEEN 4 AND 6 PM)

Fitted Curve T=0.75(X) - 26.02
Where X = 114 Rooms

		T =	**60 VPH**
ENTER:	(0.51)*(60) =		**31 VPH**
EXIT:	(0.49)*(60) =		**29 VPH**

*where, T = trip ends

TRIP GENERATION SUMMARY

WEEKDAY	**862 VTPD**
AM PEAK HOUR (ONE HOUR BETWEEN 7 AND 9 AM)	**52 VPH**
PM PEAK HOUR (ONE HOUR BETWEEN 4 AND 6 PM)	**60 VPH**

All Suite Hotel

LAND USE: 8 Rooms All Suite Hotel

TRIP GENERATION CALCULATIONS ARE BASED ON THE INSTITUTE OF TRANSPORTATION ENGINEERS' TRIP GENERATION, 10TH EDITION. THE ITE LAND USE CODE IS
All Suite Hotel (311)

WEEKDAY

Average Rate = 4.46 Trips per Room (R)

T = 4.46 Trips x 8 R

T = 36 VTPD

ENTER: (0.5)*(36) = **18 VTPD**

EXIT: (0.5)*(36) = **18 VTPD**

AM PEAK HOUR (ONE HOUR BETWEEN 7 AND 9 AM)

Average Rate = 0.34 Trips per Room (R)

T = 0.34 Trips x 8 R

T = 3 VPH

ENTER: (0.53)*(3) = **2 VPH**

EXIT: (0.47)*(3) = **1 VPH**

PM PEAK HOUR (ONE HOUR BETWEEN 4 AND 6 PM)

Average Rate = 0.36 Trips per Room (R)

T = 0.36 Trips x 8 R

T = 3 VPH

ENTER: (0.48)*(3) = **1 VPH**

EXIT: (0.52)*(3) = **2 VPH**

*where, T = trip ends

TRIP GENERATION SUMMARY

WEEKDAY	**36 VTPD**
AM PEAK HOUR (ONE HOUR BETWEEN 7 AND 9 AM)	**3 VPH**
PM PEAK HOUR (ONE HOUR BETWEEN 4 AND 6 PM)	**3 VPH**

Drinking Place

LAND USE: 985 Square Feet Drinking Place

TRIP GENERATION CALCULATIONS ARE BASED ON THE INSTITUTE OF TRANSPORTATION ENGINEERS' TRIP GENERATION, 10TH EDITION. THE ITE LAND USE CODE IS Drinking Place (925)

WEEKDAY

Average Rate = 0 Trips per 1000 Square Feet (sqft)

T = 0 Trips x 985 sqft / 1000

T = 0 VTPD

ENTER: (0.5)*(0) = **0 VTPD**

EXIT: (0.5)*(0) = **0 VTPD**

AM PEAK HOUR (ONE HOUR BETWEEN 7 AND 9 AM)

Average Rate = 0 Trips per 1000 Square Feet (sqft)

T = 0 Trips x 985 sqft / 1000

T = 0 VPH

ENTER: (0.5)*(0) = **0 VPH**

EXIT: (0.5)*(0) = **0 VPH**

PM PEAK HOUR (ONE HOUR BETWEEN 4 AND 6 PM)

Average Rate = 11.36 Trips per 1000 Square Feet (sqft)

T = 11.36 Trips x 985 sqft / 1000

T = 12 VPH

ENTER: (0.66)*(12) = **8 VPH**

EXIT: (0.34)*(12) = **4 VPH**

*where, T = trip ends

TRIP GENERATION SUMMARY

WEEKDAY	**0 VTPD**
AM PEAK HOUR (ONE HOUR BETWEEN 7 AND 9 AM)	**0 VPH**
PM PEAK HOUR (ONE HOUR BETWEEN 4 AND 6 PM)	**12 VPH**

High-Turnover (Sit-Down) Restaurant

LAND USE: 3,000 Square Feet High-Turnover (Sit-Down) Restaurant

TRIP GENERATION CALCULATIONS ARE BASED ON THE INSTITUTE OF TRANSPORTATION ENGINEERS' TRIP GENERATION, 10TH EDITION. THE ITE LAND USE CODE IS High-Turnover (Sit-Down) Restaurant (932)

WEEKDAY

Average Rate = 112.18 Trips per 1000 Square Feet (sqft)

T = 112.18 Trips x 3000 sqft / 1000

T = 338 VTPD

ENTER: (0.5)*(338) = **169 VTPD**

EXIT: (0.5)*(338) = **169 VTPD**

AM PEAK HOUR (ONE HOUR BETWEEN 7 AND 9 AM)

Average Rate = 9.94 Trips per 1000 Square Feet (sqft)

T = 9.94 Trips x 3000 sqft / 1000

T = 30 VPH

ENTER: (0.55)*(30) = **17 VPH**

EXIT: (0.45)*(30) = **13 VPH**

PM PEAK HOUR (ONE HOUR BETWEEN 4 AND 6 PM)

Average Rate = 9.77 Trips per 1000 Square Feet (sqft)

T = 9.77 Trips x 3000 sqft / 1000

T = 30 VPH

ENTER: (0.62)*(30) = **19 VPH**

EXIT: (0.38)*(30) = **11 VPH**

*where, T = trip ends

TRIP GENERATION SUMMARY

WEEKDAY	**338 VTPD**
AM PEAK HOUR (ONE HOUR BETWEEN 7 AND 9 AM)	**30 VPH**
PM PEAK HOUR (ONE HOUR BETWEEN 4 AND 6 PM)	**30 VPH**

SADDLE ROCK CROSSING
SOLDIERS PASS ROAD/STATE ROUTE 89A
TRAFFIC IMPACT ANALYSIS

APPENDIX

Capacity Calculations

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	44	966	19	5	658	39	8	1	7	14	1	25
Future Vol, veh/h	44	966	19	5	658	39	8	1	7	14	1	25
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	100	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	49	1073	21	6	731	43	9	1	8	16	1	28

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	774	0	0	1094	0	0	1560	1968	547	1378	1935	366
Stage 1	-	-	-	-	-	-	1182	1182	-	743	743	-
Stage 2	-	-	-	-	-	-	378	786	-	635	1192	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	837	-	-	634	-	-	76	62	481	104	65	631
Stage 1	-	-	-	-	-	-	201	262	-	373	420	-
Stage 2	-	-	-	-	-	-	616	401	-	433	259	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	837	-	-	634	-	-	68	58	481	96	61	631
Mov Cap-2 Maneuver	-	-	-	-	-	-	68	58	-	96	61	-
Stage 1	-	-	-	-	-	-	189	247	-	351	416	-
Stage 2	-	-	-	-	-	-	582	397	-	399	244	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.1	45.2	28.4
HCM LOS			E	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	107	837	-	-	634	-	-	198
HCM Lane V/C Ratio	0.166	0.058	-	-	0.009	-	-	0.224
HCM Control Delay (s)	45.2	9.6	-	-	10.7	-	-	28.4
HCM Lane LOS	E	A	-	-	B	-	-	D
HCM 95th %tile Q(veh)	0.6	0.2	-	-	0	-	-	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	111	874	0	0	617	47	0	0	0	57	0	83
Future Volume (veh/h)	111	874	0	0	617	47	0	0	0	57	0	83
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	123	971	0	0	686	52	0	0	0	63	0	92
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	326	1564	0	253	991	75	117	774	0	854	0	656
Arrive On Green	0.07	0.44	0.00	0.00	0.30	0.30	0.00	0.00	0.00	0.41	0.00	0.41
Sat Flow, veh/h	1781	3647	0	1781	3348	254	1304	1870	0	1781	0	1585
Grp Volume(v), veh/h	123	971	0	0	364	374	0	0	0	63	0	92
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1825	1304	1870	0	1781	0	1585
Q Serve(g_s), s	2.7	13.0	0.0	0.0	11.2	11.2	0.0	0.0	0.0	1.3	0.0	2.2
Cycle Q Clear(g_c), s	2.7	13.0	0.0	0.0	11.2	11.2	0.0	0.0	0.0	1.3	0.0	2.2
Prop In Lane	1.00		0.00	1.00		0.14	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	326	1564	0	253	526	540	117	774	0	854	0	656
V/C Ratio(X)	0.38	0.62	0.00	0.00	0.69	0.69	0.00	0.00	0.00	0.07	0.00	0.14
Avail Cap(c_a), veh/h	503	2335	0	553	1168	1199	117	774	0	854	0	656
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.6	13.3	0.0	0.0	19.2	19.2	0.0	0.0	0.0	11.0	0.0	11.2
Incr Delay (d2), s/veh	0.7	0.4	0.0	0.0	1.6	1.6	0.0	0.0	0.0	0.2	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	4.6	0.0	0.0	4.4	4.6	0.0	0.0	0.0	0.5	0.0	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.4	13.7	0.0	0.0	20.9	20.8	0.0	0.0	0.0	11.1	0.0	11.7
LnGrp LOS	B	B	A	A	C	C	A	A	A	B	A	B
Approach Vol, veh/h		1094			738			0			155	
Approach Delay, s/veh		13.8			20.8			0.0			11.5	
Approach LOS		B			C						B	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		30.0	0.0	31.6		30.0	8.9	22.7				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		25.5	10.5	40.5		25.5	10.5	40.5				
Max Q Clear Time (g_c+I1), s		0.0	0.0	15.0		4.2	4.7	13.2				
Green Ext Time (p_c), s		0.0	0.0	7.8		0.6	0.1	5.0				

Intersection Summary												
HCM 6th Ctrl Delay			16.2									
HCM 6th LOS			B									

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	927	4	1	662	4	0
Future Vol, veh/h	927	4	1	662	4	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1030	4	1	736	4	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1034	0	1402	517
Stage 1	-	-	-	-	1032	-
Stage 2	-	-	-	-	370	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	668	-	131	503
Stage 1	-	-	-	-	304	-
Stage 2	-	-	-	-	669	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	668	-	131	503
Mov Cap-2 Maneuver	-	-	-	-	239	-
Stage 1	-	-	-	-	304	-
Stage 2	-	-	-	-	668	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	20.3
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	239	-	-	668	-
HCM Lane V/C Ratio	0.019	-	-	0.002	-
HCM Control Delay (s)	20.3	-	-	10.4	-
HCM Lane LOS	C	-	-	B	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	7.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	62	1046	16	3	1044	81	8	0	1	29	0	74
Future Vol, veh/h	62	1046	16	3	1044	81	8	0	1	29	0	74
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	100	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	69	1162	18	3	1160	90	9	0	1	32	0	82

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1250	0	0	1180	0	0	1895	2565	590	1885	2484	580
Stage 1	-	-	-	-	-	-	1309	1309	-	1166	1166	-
Stage 2	-	-	-	-	-	-	586	1256	-	719	1318	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	553	-	-	588	-	-	42	26	451	43	29	458
Stage 1	-	-	-	-	-	-	168	227	-	206	266	-
Stage 2	-	-	-	-	-	-	463	241	-	386	225	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	553	-	-	588	-	-	31	23	451	39	25	458
Mov Cap-2 Maneuver	-	-	-	-	-	-	31	23	-	39	25	-
Stage 1	-	-	-	-	-	-	147	199	-	180	265	-
Stage 2	-	-	-	-	-	-	378	240	-	337	197	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	0	144.8	156.9
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	35	553	-	-	588	-	-	114
HCM Lane V/C Ratio	0.286	0.125	-	-	0.006	-	-	1.004
HCM Control Delay (s)	144.8	12.4	-	-	11.2	-	-	156.9
HCM Lane LOS	F	B	-	-	B	-	-	F
HCM 95th %tile Q(veh)	0.9	0.4	-	-	0	-	-	6.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	71	985	0	0	1084	53	0	0	0	93	0	81
Future Volume (veh/h)	71	985	0	0	1084	53	0	0	0	93	0	81
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	79	1094	0	0	1204	59	0	0	0	103	0	90
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	246	1938	0	274	1492	73	95	628	0	693	0	533
Arrive On Green	0.05	0.55	0.00	0.00	0.43	0.43	0.00	0.00	0.00	0.34	0.00	0.34
Sat Flow, veh/h	1781	3647	0	1781	3448	169	1307	1870	0	1781	0	1585
Grp Volume(v), veh/h	79	1094	0	0	620	643	0	0	0	103	0	90
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1840	1307	1870	0	1781	0	1585
Q Serve(g_s), s	1.7	15.3	0.0	0.0	23.1	23.1	0.0	0.0	0.0	3.1	0.0	3.0
Cycle Q Clear(g_c), s	1.7	15.3	0.0	0.0	23.1	23.1	0.0	0.0	0.0	3.1	0.0	3.0
Prop In Lane	1.00		0.00	1.00		0.09	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	246	1938	0	274	769	796	95	628	0	693	0	533
V/C Ratio(X)	0.32	0.56	0.00	0.00	0.81	0.81	0.00	0.00	0.00	0.15	0.00	0.17
Avail Cap(c_a), veh/h	398	1938	0	518	948	982	95	628	0	693	0	533
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.5	11.3	0.0	0.0	18.8	18.8	0.0	0.0	0.0	17.8	0.0	17.7
Incr Delay (d2), s/veh	0.7	0.4	0.0	0.0	4.3	4.2	0.0	0.0	0.0	0.5	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	5.4	0.0	0.0	9.6	9.9	0.0	0.0	0.0	1.3	0.0	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.3	11.7	0.0	0.0	23.0	22.9	0.0	0.0	0.0	18.2	0.0	18.4
LnGrp LOS	B	B	A	A	C	C	A	A	A	B	A	B
Approach Vol, veh/h		1173			1263			0			193	
Approach Delay, s/veh		11.9			23.0			0.0			18.3	
Approach LOS		B			C						B	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		30.0	0.0	45.9		30.0	8.6	37.3				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		25.5	10.5	40.5		25.5	10.5	40.5				
Max Q Clear Time (g_c+I1), s		0.0	0.0	17.3		5.1	3.7	25.1				
Green Ext Time (p_c), s		0.0	0.0	8.7		0.7	0.1	7.7				

Intersection Summary	
HCM 6th Ctrl Delay	17.7
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1075	6	1	1134	9	0
Future Vol, veh/h	1075	6	1	1134	9	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1194	7	1	1260	10	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1201	0	1830	601
Stage 1	-	-	-	-	1198	-
Stage 2	-	-	-	-	632	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	577	-	68	443
Stage 1	-	-	-	-	249	-
Stage 2	-	-	-	-	492	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	577	-	68	443
Mov Cap-2 Maneuver	-	-	-	-	178	-
Stage 1	-	-	-	-	249	-
Stage 2	-	-	-	-	491	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	26.4
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	178	-	-	577	-
HCM Lane V/C Ratio	0.056	-	-	0.002	-
HCM Control Delay (s)	26.4	-	-	11.3	-
HCM Lane LOS	D	-	-	B	-
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	46	1005	20	6	685	41	9	2	8	15	2	26
Future Vol, veh/h	46	1005	20	6	685	41	9	2	8	15	2	26
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	100	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	90	90	80	90	80	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	58	1117	22	8	761	51	11	3	10	19	3	33

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	812	0	0	1139	0	0	1642	2072	570	1453	2032	381
Stage 1	-	-	-	-	-	-	1244	1244	-	777	777	-
Stage 2	-	-	-	-	-	-	398	828	-	676	1255	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	810	-	-	609	-	-	66	53	465	91	57	617
Stage 1	-	-	-	-	-	-	184	244	-	356	405	-
Stage 2	-	-	-	-	-	-	599	384	-	409	241	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	810	-	-	609	-	-	56	49	465	80	52	617
Mov Cap-2 Maneuver	-	-	-	-	-	-	56	49	-	80	52	-
Stage 1	-	-	-	-	-	-	171	226	-	330	400	-
Stage 2	-	-	-	-	-	-	556	379	-	367	224	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.1	61.2	38.5
HCM LOS			F	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	87	810	-	-	609	-	-	160
HCM Lane V/C Ratio	0.273	0.071	-	-	0.012	-	-	0.336
HCM Control Delay (s)	61.2	9.8	-	-	11	-	-	38.5
HCM Lane LOS	F	A	-	-	B	-	-	E
HCM 95th %tile Q(veh)	1	0.2	-	-	0	-	-	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	115	909	0	0	642	49	0	0	0	59	0	86
Future Volume (veh/h)	115	909	0	0	642	49	0	0	0	59	0	86
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	135	1010	0	0	713	54	0	0	0	74	0	101
Peak Hour Factor	0.85	0.90	0.90	0.80	0.90	0.90	0.80	0.80	0.80	0.80	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	329	1601	0	247	1018	77	115	760	0	838	0	644
Arrive On Green	0.07	0.45	0.00	0.00	0.30	0.30	0.00	0.00	0.00	0.41	0.00	0.41
Sat Flow, veh/h	1781	3647	0	1781	3348	253	1294	1870	0	1781	0	1585
Grp Volume(v), veh/h	135	1010	0	0	378	389	0	0	0	74	0	101
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1825	1294	1870	0	1781	0	1585
Q Serve(g_s), s	3.0	13.7	0.0	0.0	11.8	11.8	0.0	0.0	0.0	1.6	0.0	2.5
Cycle Q Clear(g_c), s	3.0	13.7	0.0	0.0	11.8	11.8	0.0	0.0	0.0	1.6	0.0	2.5
Prop In Lane	1.00		0.00	1.00		0.14	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	329	1601	0	247	540	555	115	760	0	838	0	644
V/C Ratio(X)	0.41	0.63	0.00	0.00	0.70	0.70	0.00	0.00	0.00	0.09	0.00	0.16
Avail Cap(c_a), veh/h	494	2293	0	542	1146	1177	115	760	0	838	0	644
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.7	13.2	0.0	0.0	19.3	19.3	0.0	0.0	0.0	11.5	0.0	11.8
Incr Delay (d2), s/veh	0.8	0.4	0.0	0.0	1.7	1.6	0.0	0.0	0.0	0.2	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	4.8	0.0	0.0	4.7	4.8	0.0	0.0	0.0	0.6	0.0	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.5	13.7	0.0	0.0	21.0	20.9	0.0	0.0	0.0	11.8	0.0	12.3
LnGrp LOS	B	B	A	A	C	C	A	A	A	B	A	B
Approach Vol, veh/h		1145			767			0			175	
Approach Delay, s/veh		13.8			21.0			0.0			12.1	
Approach LOS		B			C						B	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		30.0	0.0	32.8		30.0	9.2	23.6				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		25.5	10.5	40.5		25.5	10.5	40.5				
Max Q Clear Time (g_c+I1), s		0.0	0.0	15.7		4.5	5.0	13.8				
Green Ext Time (p_c), s		0.0	0.0	8.1		0.7	0.1	5.3				

Intersection Summary												
HCM 6th Ctrl Delay			16.3									
HCM 6th LOS			B									

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	964	5	2	689	5	1
Future Vol, veh/h	964	5	2	689	5	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	80	90	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1071	6	3	766	6	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1077	0	1463	539
Stage 1	-	-	-	-	1074	-
Stage 2	-	-	-	-	389	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	643	-	119	487
Stage 1	-	-	-	-	289	-
Stage 2	-	-	-	-	654	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	643	-	118	487
Mov Cap-2 Maneuver	-	-	-	-	226	-
Stage 1	-	-	-	-	289	-
Stage 2	-	-	-	-	651	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	20
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	248	-	-	643	-
HCM Lane V/C Ratio	0.03	-	-	0.004	-
HCM Control Delay (s)	20	-	-	10.6	-
HCM Lane LOS	C	-	-	B	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	17.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	65	1088	17	4	1086	84	9	1	2	30	1	77
Future Vol, veh/h	65	1088	17	4	1086	84	9	1	2	30	1	77
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	100	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	90	90	80	90	80	80	80	80	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	81	1209	19	5	1207	105	11	1	3	35	1	91

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1312	0	0	1228	0	0	1995	2703	614	1984	2607	604
Stage 1	-	-	-	-	-	-	1381	1381	-	1217	1217	-
Stage 2	-	-	-	-	-	-	614	1322	-	767	1390	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	523	-	-	563	-	-	36	21	435	36	24	441
Stage 1	-	-	-	-	-	-	152	210	-	192	252	-
Stage 2	-	-	-	-	-	-	446	224	-	361	208	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	523	-	-	563	-	-	24	18	435	~ 30	20	441
Mov Cap-2 Maneuver	-	-	-	-	-	-	24	18	-	~ 30	20	-
Stage 1	-	-	-	-	-	-	128	177	-	162	250	-
Stage 2	-	-	-	-	-	-	350	222	-	301	176	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	0	233.8	$ 337
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	28	523	-	-	563	-	-	88
HCM Lane V/C Ratio	0.536	0.155	-	-	0.009	-	-	1.444
HCM Control Delay (s)	233.8	13.1	-	-	11.5	-	-	$ 337
HCM Lane LOS	F	B	-	-	B	-	-	F
HCM 95th %tile Q(veh)	1.7	0.5	-	-	0	-	-	9.8

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	74	1025	0	0	1128	55	0	0	0	97	0	84
Future Volume (veh/h)	74	1025	0	0	1128	55	0	0	0	97	0	84
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	87	1139	0	0	1253	61	0	0	0	114	0	99
Peak Hour Factor	0.85	0.90	0.90	0.80	0.90	0.90	0.80	0.80	0.80	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	242	1971	0	265	1524	74	93	616	0	679	0	522
Arrive On Green	0.05	0.55	0.00	0.00	0.44	0.44	0.00	0.00	0.00	0.33	0.00	0.33
Sat Flow, veh/h	1781	3647	0	1781	3449	168	1296	1870	0	1781	0	1585
Grp Volume(v), veh/h	87	1139	0	0	645	669	0	0	0	114	0	99
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1840	1296	1870	0	1781	0	1585
Q Serve(g_s), s	1.9	16.3	0.0	0.0	24.6	24.7	0.0	0.0	0.0	3.6	0.0	3.5
Cycle Q Clear(g_c), s	1.9	16.3	0.0	0.0	24.6	24.7	0.0	0.0	0.0	3.6	0.0	3.5
Prop In Lane	1.00		0.00	1.00		0.09	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	242	1971	0	265	785	813	93	616	0	679	0	522
V/C Ratio(X)	0.36	0.58	0.00	0.00	0.82	0.82	0.00	0.00	0.00	0.17	0.00	0.19
Avail Cap(c_a), veh/h	386	1971	0	505	929	962	93	616	0	679	0	522
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.1	11.3	0.0	0.0	18.9	19.0	0.0	0.0	0.0	18.6	0.0	18.6
Incr Delay (d2), s/veh	0.9	0.4	0.0	0.0	5.1	5.1	0.0	0.0	0.0	0.5	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	5.7	0.0	0.0	10.4	10.8	0.0	0.0	0.0	1.5	0.0	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.0	11.7	0.0	0.0	24.1	24.0	0.0	0.0	0.0	19.2	0.0	19.4
LnGrp LOS	B	B	A	A	C	C	A	A	A	B	A	B
Approach Vol, veh/h		1226			1314			0			213	
Approach Delay, s/veh		12.0			24.0			0.0			19.3	
Approach LOS		B			C						B	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		30.0	0.0	47.5		30.0	8.7	38.7				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		25.5	10.5	40.5		25.5	10.5	40.5				
Max Q Clear Time (g_c+I1), s		0.0	0.0	18.3		5.6	3.9	26.7				
Green Ext Time (p_c), s		0.0	0.0	9.0		0.8	0.1	7.5				

Intersection Summary	
HCM 6th Ctrl Delay	18.3
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1118	7	2	1180	10	1
Future Vol, veh/h	1118	7	2	1180	10	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	80	90	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1242	8	3	1311	13	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1250	0	1908	625
Stage 1	-	-	-	-	1246	-
Stage 2	-	-	-	-	662	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	553	-	60	428
Stage 1	-	-	-	-	234	-
Stage 2	-	-	-	-	475	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	553	-	60	428
Mov Cap-2 Maneuver	-	-	-	-	167	-
Stage 1	-	-	-	-	234	-
Stage 2	-	-	-	-	473	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	27
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	177	-	-	553	-
HCM Lane V/C Ratio	0.078	-	-	0.005	-
HCM Control Delay (s)	27	-	-	11.5	-
HCM Lane LOS	D	-	-	B	-
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	49	1067	21	7	726	43	10	3	9	16	3	28
Future Vol, veh/h	49	1067	21	7	726	43	10	3	9	16	3	28
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	100	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	90	90	80	90	80	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	61	1186	23	9	807	54	13	4	11	20	4	35

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	861	0	0	1209	0	0	1744	2199	605	1542	2156	404
Stage 1	-	-	-	-	-	-	1320	1320	-	825	825	-
Stage 2	-	-	-	-	-	-	424	879	-	717	1331	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	776	-	-	573	-	-	55	44	441	78	47	596
Stage 1	-	-	-	-	-	-	166	225	-	333	385	-
Stage 2	-	-	-	-	-	-	578	363	-	387	222	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	776	-	-	573	-	-	45	40	441	66	43	596
Mov Cap-2 Maneuver	-	-	-	-	-	-	45	40	-	66	43	-
Stage 1	-	-	-	-	-	-	153	207	-	307	379	-
Stage 2	-	-	-	-	-	-	530	357	-	341	204	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.1	88.2	53.1
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	69	776	-	-	573	-	-	131
HCM Lane V/C Ratio	0.399	0.079	-	-	0.015	-	-	0.448
HCM Control Delay (s)	88.2	10	-	-	11.4	-	-	53.1
HCM Lane LOS	F	B	-	-	B	-	-	F
HCM 95th %tile Q(veh)	1.5	0.3	-	-	0	-	-	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	123	965	0	0	681	52	0	0	0	63	0	92
Future Volume (veh/h)	123	965	0	0	681	52	0	0	0	63	0	92
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	145	1072	0	0	757	58	0	0	0	79	0	108
Peak Hour Factor	0.85	0.90	0.90	0.80	0.90	0.90	0.80	0.80	0.80	0.80	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	330	1654	0	238	1063	81	112	739	0	815	0	626
Arrive On Green	0.08	0.47	0.00	0.00	0.32	0.32	0.00	0.00	0.00	0.40	0.00	0.40
Sat Flow, veh/h	1781	3647	0	1781	3345	256	1286	1870	0	1781	0	1585
Grp Volume(v), veh/h	145	1072	0	0	402	413	0	0	0	79	0	108
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1824	1286	1870	0	1781	0	1585
Q Serve(g_s), s	3.3	14.9	0.0	0.0	12.9	12.9	0.0	0.0	0.0	1.8	0.0	2.9
Cycle Q Clear(g_c), s	3.3	14.9	0.0	0.0	12.9	12.9	0.0	0.0	0.0	1.8	0.0	2.9
Prop In Lane	1.00		0.00	1.00		0.14	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	330	1654	0	238	565	580	112	739	0	815	0	626
V/C Ratio(X)	0.44	0.65	0.00	0.00	0.71	0.71	0.00	0.00	0.00	0.10	0.00	0.17
Avail Cap(c_a), veh/h	481	2230	0	525	1115	1145	112	739	0	815	0	626
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.7	13.2	0.0	0.0	19.4	19.4	0.0	0.0	0.0	12.4	0.0	12.7
Incr Delay (d2), s/veh	0.9	0.4	0.0	0.0	1.7	1.6	0.0	0.0	0.0	0.2	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	5.2	0.0	0.0	5.1	5.3	0.0	0.0	0.0	0.7	0.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.7	13.6	0.0	0.0	21.1	21.1	0.0	0.0	0.0	12.6	0.0	13.3
LnGrp LOS	B	B	A	A	C	C	A	A	A	B	A	B
Approach Vol, veh/h		1217			815			0			187	
Approach Delay, s/veh		13.8			21.1			0.0			13.0	
Approach LOS		B			C						B	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		30.0	0.0	34.5		30.0	9.5	25.0				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		25.5	10.5	40.5		25.5	10.5	40.5				
Max Q Clear Time (g_c+I1), s		0.0	0.0	16.9		4.9	5.3	14.9				
Green Ext Time (p_c), s		0.0	0.0	8.5		0.8	0.2	5.6				

Intersection Summary	
HCM 6th Ctrl Delay	16.4
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1024	6	3	731	6	2
Future Vol, veh/h	1024	6	3	731	6	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	80	90	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1138	7	4	812	8	3

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1145	0	1556	573
Stage 1	-	-	-	-	1142	-
Stage 2	-	-	-	-	414	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	606	-	104	463
Stage 1	-	-	-	-	266	-
Stage 2	-	-	-	-	635	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	606	-	103	463
Mov Cap-2 Maneuver	-	-	-	-	208	-
Stage 1	-	-	-	-	266	-
Stage 2	-	-	-	-	631	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	20.6
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	241	-	-	606	-
HCM Lane V/C Ratio	0.041	-	-	0.006	-
HCM Control Delay (s)	20.6	-	-	11	-
HCM Lane LOS	C	-	-	B	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	34.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	68	1155	18	5	1153	89	10	2	3	32	2	82
Future Vol, veh/h	68	1155	18	5	1153	89	10	2	3	32	2	82
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	100	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	90	90	80	90	80	80	80	80	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	85	1283	20	6	1281	111	13	3	4	38	2	96

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1392	0	0	1303	0	0	2117	2867	652	2106	2766	641
Stage 1	-	-	-	-	-	-	1463	1463	-	1293	1293	-
Stage 2	-	-	-	-	-	-	654	1404	-	813	1473	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	487	-	-	527	-	-	29	16	411	~ 29	19	417
Stage 1	-	-	-	-	-	-	135	191	-	172	231	-
Stage 2	-	-	-	-	-	-	422	204	-	339	189	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	487	-	-	527	-	-	17	13	411	~ 21	16	417
Mov Cap-2 Maneuver	-	-	-	-	-	-	17	13	-	~ 21	16	-
Stage 1	-	-	-	-	-	-	111	158	-	142	228	-
Stage 2	-	-	-	-	-	-	317	202	-	273	156	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.9	0.1	$ 446.9	$ 677.5
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	20	487	-	-	527	-	-	63
HCM Lane V/C Ratio	0.938	0.175	-	-	0.012	-	-	2.166
HCM Control Delay (s)	$ 446.9	13.9	-	-	11.9	-	-	$ 677.5
HCM Lane LOS	F	B	-	-	B	-	-	F
HCM 95th %tile Q(veh)	2.6	0.6	-	-	0	-	-	13.1

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	78	1088	0	0	1197	59	0	0	0	103	0	89
Future Volume (veh/h)	78	1088	0	0	1197	59	0	0	0	103	0	89
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	92	1209	0	0	1330	66	0	0	0	121	0	105
Peak Hour Factor	0.85	0.90	0.90	0.80	0.90	0.90	0.80	0.80	0.80	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	231	2013	0	251	1569	78	90	599	0	661	0	508
Arrive On Green	0.05	0.57	0.00	0.00	0.46	0.46	0.00	0.00	0.00	0.32	0.00	0.32
Sat Flow, veh/h	1781	3647	0	1781	3446	171	1289	1870	0	1781	0	1585
Grp Volume(v), veh/h	92	1209	0	0	685	711	0	0	0	121	0	105
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1840	1289	1870	0	1781	0	1585
Q Serve(g_s), s	2.0	17.8	0.0	0.0	27.2	27.3	0.0	0.0	0.0	3.9	0.0	3.8
Cycle Q Clear(g_c), s	2.0	17.8	0.0	0.0	27.2	27.3	0.0	0.0	0.0	3.9	0.0	3.8
Prop In Lane	1.00		0.00	1.00		0.09	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	231	2013	0	251	809	838	90	599	0	661	0	508
V/C Ratio(X)	0.40	0.60	0.00	0.00	0.85	0.85	0.00	0.00	0.00	0.18	0.00	0.21
Avail Cap(c_a), veh/h	369	2013	0	484	904	936	90	599	0	661	0	508
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.2	11.3	0.0	0.0	19.2	19.2	0.0	0.0	0.0	19.7	0.0	19.7
Incr Delay (d2), s/veh	1.1	0.5	0.0	0.0	6.9	6.8	0.0	0.0	0.0	0.6	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	6.3	0.0	0.0	11.7	12.2	0.0	0.0	0.0	1.7	0.0	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.3	11.8	0.0	0.0	26.1	26.1	0.0	0.0	0.0	20.3	0.0	20.6
LnGrp LOS	B	B	A	A	C	C	A	A	A	C	A	C
Approach Vol, veh/h		1301			1396			0			226	
Approach Delay, s/veh		12.2			26.1			0.0			20.5	
Approach LOS		B			C						C	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		30.0	0.0	49.6		30.0	8.8	40.7				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		25.5	10.5	40.5		25.5	10.5	40.5				
Max Q Clear Time (g_c+I1), s		0.0	0.0	19.8		5.9	4.0	29.3				
Green Ext Time (p_c), s		0.0	0.0	9.3		0.9	0.1	6.9				

Intersection Summary	
HCM 6th Ctrl Delay	19.5
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1187	8	3	1252	11	2
Future Vol, veh/h	1187	8	3	1252	11	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	80	90	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1319	9	4	1391	14	3

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1328	0	2028	664
Stage 1	-	-	-	-	1324	-
Stage 2	-	-	-	-	704	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	516	-	50	403
Stage 1	-	-	-	-	213	-
Stage 2	-	-	-	-	452	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	516	-	50	403
Mov Cap-2 Maneuver	-	-	-	-	151	-
Stage 1	-	-	-	-	213	-
Stage 2	-	-	-	-	448	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	28.9
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	167	-	-	516	-
HCM Lane V/C Ratio	0.097	-	-	0.007	-
HCM Control Delay (s)	28.9	-	-	12	-
HCM Lane LOS	D	-	-	B	-
HCM 95th %tile Q(veh)	0.3	-	-	0	-

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	46	1032	23	6	710	41	12	2	8	15	2	26
Future Vol, veh/h	46	1032	23	6	710	41	12	2	8	15	2	26
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	100	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	90	90	80	90	80	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	58	1147	26	8	789	51	15	3	10	19	3	33

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	840	0	0	1173	0	0	1688	2132	587	1496	2094	395
Stage 1	-	-	-	-	-	-	1276	1276	-	805	805	-
Stage 2	-	-	-	-	-	-	412	856	-	691	1289	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	791	-	-	591	-	-	61	49	453	85	52	604
Stage 1	-	-	-	-	-	-	176	236	-	342	393	-
Stage 2	-	-	-	-	-	-	588	373	-	401	232	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	791	-	-	591	-	-	52	45	453	74	48	604
Mov Cap-2 Maneuver	-	-	-	-	-	-	52	45	-	74	48	-
Stage 1	-	-	-	-	-	-	163	219	-	317	387	-
Stage 2	-	-	-	-	-	-	545	368	-	359	215	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.1	78.5	41.8
HCM LOS			F	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	75	791	-	-	591	-	-	150
HCM Lane V/C Ratio	0.367	0.073	-	-	0.013	-	-	0.358
HCM Control Delay (s)	78.5	9.9	-	-	11.2	-	-	41.8
HCM Lane LOS	F	A	-	-	B	-	-	E
HCM 95th %tile Q(veh)	1.4	0.2	-	-	0	-	-	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	115	909	27	25	642	49	25	0	22	59	0	86
Future Volume (veh/h)	115	909	27	25	642	49	25	0	22	59	0	86
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	135	1010	30	31	713	54	31	0	28	74	0	101
Peak Hour Factor	0.85	0.90	0.90	0.80	0.90	0.90	0.80	0.80	0.80	0.80	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	355	1357	40	241	1155	87	545	0	603	618	0	603
Arrive On Green	0.07	0.39	0.39	0.03	0.34	0.34	0.38	0.00	0.38	0.38	0.00	0.38
Sat Flow, veh/h	1781	3524	105	1781	3348	253	1294	0	1585	1382	0	1585
Grp Volume(v), veh/h	135	509	531	31	378	389	31	0	28	74	0	101
Grp Sat Flow(s),veh/h/ln	1781	1777	1852	1781	1777	1825	1294	0	1585	1382	0	1585
Q Serve(g_s), s	3.2	16.6	16.6	0.7	11.9	11.9	1.1	0.0	0.7	2.4	0.0	2.8
Cycle Q Clear(g_c), s	3.2	16.6	16.6	0.7	11.9	11.9	3.9	0.0	0.7	3.1	0.0	2.8
Prop In Lane	1.00		0.06	1.00		0.14	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	355	685	713	241	613	629	545	0	603	618	0	603
V/C Ratio(X)	0.38	0.74	0.74	0.13	0.62	0.62	0.06	0.00	0.05	0.12	0.00	0.17
Avail Cap(c_a), veh/h	504	1074	1119	462	1074	1103	545	0	603	618	0	603
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.5	17.7	17.7	14.7	18.3	18.3	15.0	0.0	13.1	14.1	0.0	13.7
Incr Delay (d2), s/veh	0.7	1.6	1.6	0.2	1.0	1.0	0.2	0.0	0.1	0.4	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	6.4	6.7	0.3	4.6	4.8	0.3	0.0	0.3	0.8	0.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.2	19.4	19.3	15.0	19.3	19.3	15.2	0.0	13.2	14.5	0.0	14.3
LnGrp LOS	B	B	B	B	B	B	B	A	B	B	A	B
Approach Vol, veh/h		1175			798			59			175	
Approach Delay, s/veh		18.8			19.1			14.3			14.4	
Approach LOS		B			B			B			B	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		30.0	6.7	30.3		30.0	9.4	27.6				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		25.5	10.5	40.5		25.5	10.5	40.5				
Max Q Clear Time (g_c+I1), s		5.9	2.7	18.6		5.1	5.2	13.9				
Green Ext Time (p_c), s		0.2	0.0	7.3		0.7	0.1	5.3				

Intersection Summary	
HCM 6th Ctrl Delay	18.4
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	986	5	2	714	5	1
Future Vol, veh/h	986	5	2	714	5	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	80	90	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1096	6	3	793	6	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1102	0	1502	551
Stage 1	-	-	-	-	1099	-
Stage 2	-	-	-	-	403	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	629	-	112	478
Stage 1	-	-	-	-	281	-
Stage 2	-	-	-	-	644	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	629	-	111	478
Mov Cap-2 Maneuver	-	-	-	-	219	-
Stage 1	-	-	-	-	281	-
Stage 2	-	-	-	-	641	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	20.4
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	241	-	-	629	-
HCM Lane V/C Ratio	0.031	-	-	0.004	-
HCM Control Delay (s)	20.4	-	-	10.7	-
HCM Lane LOS	C	-	-	B	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	0.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	3	19	0	3	28
Future Vol, veh/h	0	3	19	0	3	28
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	4	24	0	4	35

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	67	24	0	0	24	0
Stage 1	24	-	-	-	-	-
Stage 2	43	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	938	1052	-	-	1591	-
Stage 1	999	-	-	-	-	-
Stage 2	979	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	935	1052	-	-	1591	-
Mov Cap-2 Maneuver	935	-	-	-	-	-
Stage 1	999	-	-	-	-	-
Stage 2	976	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.4	0	0.7
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1052	1591	-
HCM Lane V/C Ratio	-	-	0.004	0.002	-
HCM Control Delay (s)	-	-	8.4	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	20.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	65	1125	21	4	1114	84	12	1	2	30	1	77
Future Vol, veh/h	65	1125	21	4	1114	84	12	1	2	30	1	77
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	100	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	90	90	80	90	80	80	80	80	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	81	1250	23	5	1238	105	15	1	3	35	1	91

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1343	0	0	1273	0	0	2054	2777	637	2036	2683	619
Stage 1	-	-	-	-	-	-	1424	1424	-	1248	1248	-
Stage 2	-	-	-	-	-	-	630	1353	-	788	1435	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	509	-	-	541	-	-	32	19	420	~ 33	22	432
Stage 1	-	-	-	-	-	-	143	200	-	183	243	-
Stage 2	-	-	-	-	-	-	436	216	-	350	197	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	509	-	-	541	-	-	21	16	420	~ 27	18	432
Mov Cap-2 Maneuver	-	-	-	-	-	-	21	16	-	~ 27	18	-
Stage 1	-	-	-	-	-	-	120	168	-	154	241	-
Stage 2	-	-	-	-	-	-	340	214	-	290	166	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	0	$ 363.2	$ 405.2
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	23	509	-	-	541	-	-	80
HCM Lane V/C Ratio	0.815	0.16	-	-	0.009	-	-	1.588
HCM Control Delay (s)	$ 363.2	13.4	-	-	11.7	-	-	$ 405.2
HCM Lane LOS	F	B	-	-	B	-	-	F
HCM 95th %tile Q(veh)	2.4	0.6	-	-	0	-	-	10.4

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	74	1025	37	34	1128	55	28	0	25	97	0	84
Future Volume (veh/h)	74	1025	37	34	1128	55	28	0	25	97	0	84
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	87	1139	41	42	1253	61	35	0	31	114	0	99
Peak Hour Factor	0.85	0.90	0.90	0.80	0.90	0.90	0.80	0.80	0.80	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	242	1603	58	255	1524	74	462	0	522	528	0	522
Arrive On Green	0.05	0.46	0.46	0.04	0.44	0.44	0.33	0.00	0.33	0.33	0.00	0.33
Sat Flow, veh/h	1781	3499	126	1781	3449	168	1296	0	1585	1378	0	1585
Grp Volume(v), veh/h	87	578	602	42	645	669	35	0	31	114	0	99
Grp Sat Flow(s),veh/h/ln	1781	1777	1848	1781	1777	1840	1296	0	1585	1378	0	1585
Q Serve(g_s), s	2.0	20.3	20.3	1.0	24.6	24.7	1.5	0.0	1.0	4.8	0.0	3.5
Cycle Q Clear(g_c), s	2.0	20.3	20.3	1.0	24.6	24.7	5.0	0.0	1.0	5.8	0.0	3.5
Prop In Lane	1.00		0.07	1.00		0.09	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	242	814	847	255	785	813	462	0	522	528	0	522
V/C Ratio(X)	0.36	0.71	0.71	0.16	0.82	0.82	0.08	0.00	0.06	0.22	0.00	0.19
Avail Cap(c_a), veh/h	386	929	966	428	929	962	462	0	522	528	0	522
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.3	16.9	16.9	13.3	18.9	19.0	20.4	0.0	17.8	19.8	0.0	18.6
Incr Delay (d2), s/veh	0.9	2.2	2.1	0.3	5.1	5.1	0.3	0.0	0.2	0.9	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	8.0	8.3	0.4	10.4	10.8	0.5	0.0	0.4	1.6	0.0	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.2	19.0	19.0	13.6	24.1	24.0	20.7	0.0	18.0	20.7	0.0	19.4
LnGrp LOS	B	B	B	B	C	C	C	A	B	C	A	B
Approach Vol, veh/h		1267			1356			66			213	
Approach Delay, s/veh		18.8			23.7			19.4			20.1	
Approach LOS		B			C			B			C	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	30.0	7.5	40.0	30.0	8.7	38.7
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	25.5	10.5	40.5	25.5	10.5	40.5
Max Q Clear Time (g_c+I1), s	7.0	3.0	22.3	7.8	4.0	26.7
Green Ext Time (p_c), s	0.2	0.0	7.8	0.8	0.1	7.5

Intersection Summary	
HCM 6th Ctrl Delay	21.2
HCM 6th LOS	C

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1143	7	2	1214	10	1
Future Vol, veh/h	1143	7	2	1214	10	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	80	90	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1270	8	3	1349	13	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1278	0	1955	639
Stage 1	-	-	-	-	1274	-
Stage 2	-	-	-	-	681	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	539	-	56	419
Stage 1	-	-	-	-	226	-
Stage 2	-	-	-	-	464	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	539	-	56	419
Mov Cap-2 Maneuver	-	-	-	-	160	-
Stage 1	-	-	-	-	226	-
Stage 2	-	-	-	-	461	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	28
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	170	-	-	539	-
HCM Lane V/C Ratio	0.081	-	-	0.005	-
HCM Control Delay (s)	28	-	-	11.7	-
HCM Lane LOS	D	-	-	B	-
HCM 95th %tile Q(veh)	0.3	-	-	0	-

Intersection	
Int Delay, s/veh	1.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	3	12	0	4	22
Future Vol, veh/h	0	3	12	0	4	22
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	4	15	0	5	28

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	53	15	0	0	15	0
Stage 1	15	-	-	-	-	-
Stage 2	38	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	955	1065	-	-	1603	-
Stage 1	1008	-	-	-	-	-
Stage 2	984	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	952	1065	-	-	1603	-
Mov Cap-2 Maneuver	952	-	-	-	-	-
Stage 1	1008	-	-	-	-	-
Stage 2	981	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.4	0	1.1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1065	1603	-
HCM Lane V/C Ratio	-	-	0.004	0.003	-
HCM Control Delay (s)	-	-	8.4	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	3.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	49	1094	24	7	751	43	13	3	9	16	3	28
Future Vol, veh/h	49	1094	24	7	751	43	13	3	9	16	3	28
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	100	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	90	90	80	90	80	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	61	1216	27	9	834	54	16	4	11	20	4	35

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	888	0	0	1243	0	0	1789	2258	622	1584	2217	417
Stage 1	-	-	-	-	-	-	1352	1352	-	852	852	-
Stage 2	-	-	-	-	-	-	437	906	-	732	1365	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	758	-	-	556	-	-	51	41	430	73	43	585
Stage 1	-	-	-	-	-	-	158	217	-	321	374	-
Stage 2	-	-	-	-	-	-	568	353	-	379	214	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	758	-	-	556	-	-	41	37	430	61	39	585
Mov Cap-2 Maneuver	-	-	-	-	-	-	41	37	-	61	39	-
Stage 1	-	-	-	-	-	-	145	200	-	295	368	-
Stage 2	-	-	-	-	-	-	520	347	-	333	197	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.1	117.5	60.1
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	60	758	-	-	556	-	-	121
HCM Lane V/C Ratio	0.521	0.081	-	-	0.016	-	-	0.486
HCM Control Delay (s)	117.5	10.2	-	-	11.6	-	-	60.1
HCM Lane LOS	F	B	-	-	B	-	-	F
HCM 95th %tile Q(veh)	2.1	0.3	-	-	0	-	-	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	123	965	27	25	681	52	25	0	22	63	0	92
Future Volume (veh/h)	123	965	27	25	681	52	25	0	22	63	0	92
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	145	1072	30	31	757	58	31	0	28	79	0	108
Peak Hour Factor	0.85	0.90	0.90	0.80	0.90	0.90	0.80	0.80	0.80	0.80	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	353	1415	40	234	1196	92	522	0	587	601	0	587
Arrive On Green	0.08	0.40	0.40	0.03	0.36	0.36	0.37	0.00	0.37	0.37	0.00	0.37
Sat Flow, veh/h	1781	3531	99	1781	3345	256	1286	0	1585	1382	0	1585
Grp Volume(v), veh/h	145	539	563	31	402	413	31	0	28	79	0	108
Grp Sat Flow(s),veh/h/ln	1781	1777	1853	1781	1777	1824	1286	0	1585	1382	0	1585
Q Serve(g_s), s	3.4	18.0	18.0	0.7	12.9	12.9	1.1	0.0	0.8	2.7	0.0	3.2
Cycle Q Clear(g_c), s	3.4	18.0	18.0	0.7	12.9	12.9	4.3	0.0	0.8	3.5	0.0	3.2
Prop In Lane	1.00		0.05	1.00		0.14	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	353	712	743	234	635	652	522	0	587	601	0	587
V/C Ratio(X)	0.41	0.76	0.76	0.13	0.63	0.63	0.06	0.00	0.05	0.13	0.00	0.18
Avail Cap(c_a), veh/h	490	1046	1090	448	1046	1074	522	0	587	601	0	587
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.4	17.7	17.7	14.8	18.4	18.4	16.1	0.0	13.9	15.0	0.0	14.6
Incr Delay (d2), s/veh	0.8	1.9	1.8	0.3	1.0	1.0	0.2	0.0	0.2	0.5	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	7.0	7.3	0.3	5.1	5.2	0.3	0.0	0.3	0.9	0.0	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.2	19.6	19.5	15.0	19.4	19.4	16.3	0.0	14.0	15.4	0.0	15.3
LnGrp LOS	B	B	B	B	B	B	B	A	B	B	A	B
Approach Vol, veh/h		1247			846			59			187	
Approach Delay, s/veh		18.9			19.2			15.2			15.4	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	30.0	6.7	32.1	30.0	9.7	29.1
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	25.5	10.5	40.5	25.5	10.5	40.5
Max Q Clear Time (g_c+I1), s	6.3	2.7	20.0	5.5	5.4	14.9
Green Ext Time (p_c), s	0.2	0.0	7.6	0.8	0.2	5.6

Intersection Summary	
HCM 6th Ctrl Delay	18.7
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1046	6	3	756	6	2
Future Vol, veh/h	1046	6	3	756	6	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	80	90	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1162	7	4	840	8	3

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1169	0	1594	585
Stage 1	-	-	-	-	1166	-
Stage 2	-	-	-	-	428	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	593	-	98	454
Stage 1	-	-	-	-	259	-
Stage 2	-	-	-	-	625	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	593	-	97	454
Mov Cap-2 Maneuver	-	-	-	-	201	-
Stage 1	-	-	-	-	259	-
Stage 2	-	-	-	-	621	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	21.1
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	234	-	-	593	-
HCM Lane V/C Ratio	0.043	-	-	0.006	-
HCM Control Delay (s)	21.1	-	-	11.1	-
HCM Lane LOS	C	-	-	B	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	0.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	3	22	0	3	31
Future Vol, veh/h	0	3	22	0	3	31
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	4	28	0	4	39

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	75	28	0	0	28	0
Stage 1	28	-	-	-	-	-
Stage 2	47	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	928	1047	-	-	1585	-
Stage 1	995	-	-	-	-	-
Stage 2	975	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	925	1047	-	-	1585	-
Mov Cap-2 Maneuver	925	-	-	-	-	-
Stage 1	995	-	-	-	-	-
Stage 2	972	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.5	0	0.6
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1047	1585	-
HCM Lane V/C Ratio	-	-	0.004	0.002	-
HCM Control Delay (s)	-	-	8.5	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	40.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	68	1192	22	5	1181	89	13	2	3	32	2	82
Future Vol, veh/h	68	1192	22	5	1181	89	13	2	3	32	2	82
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	100	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	90	90	80	90	80	80	80	80	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	85	1324	24	6	1312	111	16	3	4	38	2	96

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1423	0	0	1348	0	0	2175	2941	674	2158	2842	656
Stage 1	-	-	-	-	-	-	1506	1506	-	1324	1324	-
Stage 2	-	-	-	-	-	-	669	1435	-	834	1518	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	474	-	-	507	-	-	26	15	397	~ 27	17	408
Stage 1	-	-	-	-	-	-	127	182	-	165	224	-
Stage 2	-	-	-	-	-	-	413	197	-	329	180	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	474	-	-	507	-	-	~ 15	12	397	~ 19	14	408
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 15	12	-	~ 19	14	-
Stage 1	-	-	-	-	-	-	104	149	-	135	221	-
Stage 2	-	-	-	-	-	-	308	195	-	263	148	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	0.1	$ 652.1	$ 789.8
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	17	474	-	-	507	-	-	57
HCM Lane V/C Ratio	1.324	0.179	-	-	0.012	-	-	2.394
HCM Control Delay (s)	$ 652.1	14.2	-	-	12.2	-	-	$ 789.8
HCM Lane LOS	F	B	-	-	B	-	-	F
HCM 95th %tile Q(veh)	3.3	0.6	-	-	0	-	-	13.7

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	78	1092	37	34	1197	59	28	0	25	103	0	89
Future Volume (veh/h)	78	1092	37	34	1197	59	28	0	25	103	0	89
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	92	1213	41	42	1330	66	35	0	31	121	0	105
Peak Hour Factor	0.85	0.90	0.90	0.80	0.90	0.90	0.80	0.80	0.80	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	231	1655	56	243	1569	78	441	0	508	513	0	508
Arrive On Green	0.05	0.47	0.47	0.04	0.46	0.46	0.32	0.00	0.32	0.32	0.00	0.32
Sat Flow, veh/h	1781	3507	118	1781	3446	171	1289	0	1585	1378	0	1585
Grp Volume(v), veh/h	92	614	640	42	685	711	35	0	31	121	0	105
Grp Sat Flow(s),veh/h/ln	1781	1777	1849	1781	1777	1840	1289	0	1585	1378	0	1585
Q Serve(g_s), s	2.1	22.2	22.2	1.0	27.2	27.3	1.6	0.0	1.1	5.3	0.0	3.8
Cycle Q Clear(g_c), s	2.1	22.2	22.2	1.0	27.2	27.3	5.5	0.0	1.1	6.4	0.0	3.8
Prop In Lane	1.00		0.06	1.00		0.09	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	231	839	873	243	809	838	441	0	508	513	0	508
V/C Ratio(X)	0.40	0.73	0.73	0.17	0.85	0.85	0.08	0.00	0.06	0.24	0.00	0.21
Avail Cap(c_a), veh/h	369	904	941	411	904	936	441	0	508	513	0	508
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.2	17.0	17.0	13.5	19.2	19.2	21.7	0.0	18.7	21.0	0.0	19.7
Incr Delay (d2), s/veh	1.1	2.9	2.8	0.3	6.9	6.8	0.4	0.0	0.2	1.1	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	8.9	9.3	0.4	11.7	12.2	0.5	0.0	0.4	1.8	0.0	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.3	19.8	19.7	13.8	26.1	26.1	22.0	0.0	19.0	22.0	0.0	20.6
LnGrp LOS	B	B	B	B	C	C	C	A	B	C	A	C
Approach Vol, veh/h		1346			1438			66			226	
Approach Delay, s/veh		19.6			25.7			20.6			21.4	
Approach LOS		B			C			C			C	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		30.0	7.5	42.1		30.0	8.8	40.7				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		25.5	10.5	40.5		25.5	10.5	40.5				
Max Q Clear Time (g_c+I1), s		7.5	3.0	24.2		8.4	4.1	29.3				
Green Ext Time (p_c), s		0.2	0.0	7.9		0.8	0.1	6.9				

Intersection Summary												
HCM 6th Ctrl Delay			22.6									
HCM 6th LOS			C									

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1212	8	2	1286	11	2
Future Vol, veh/h	1212	8	2	1286	11	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	80	90	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1347	9	3	1429	14	3

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1356	0	2073	678
Stage 1	-	-	-	-	1352	-
Stage 2	-	-	-	-	721	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	503	-	46	395
Stage 1	-	-	-	-	206	-
Stage 2	-	-	-	-	443	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	503	-	46	395
Mov Cap-2 Maneuver	-	-	-	-	146	-
Stage 1	-	-	-	-	206	-
Stage 2	-	-	-	-	440	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	29.7
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	162	-	-	503	-
HCM Lane V/C Ratio	0.1	-	-	0.005	-
HCM Control Delay (s)	29.7	-	-	12.2	-
HCM Lane LOS	D	-	-	B	-
HCM 95th %tile Q(veh)	0.3	-	-	0	-

Intersection	
Int Delay, s/veh	1.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	3	15	0	4	25
Future Vol, veh/h	0	3	15	0	4	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	4	19	0	5	31

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	60	19	0	0	19	0
Stage 1	19	-	-	-	-	-
Stage 2	41	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	947	1059	-	-	1597	-
Stage 1	1004	-	-	-	-	-
Stage 2	981	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	944	1059	-	-	1597	-
Mov Cap-2 Maneuver	944	-	-	-	-	-
Stage 1	1004	-	-	-	-	-
Stage 2	978	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.4	0	1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1059	1597	-
HCM Lane V/C Ratio	-	-	0.004	0.003	-
HCM Control Delay (s)	-	-	8.4	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	49	1094	24	7	751	43	13	3	9	16	3	28
Future Volume (veh/h)	49	1094	24	7	751	43	13	3	9	16	3	28
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	61	1216	27	9	834	54	16	4	11	20	4	35
Peak Hour Factor	0.80	0.90	0.90	0.80	0.90	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	495	1946	43	332	1773	791	193	58	67	158	34	112
Arrive On Green	0.06	0.55	0.55	0.01	0.50	0.50	0.12	0.12	0.12	0.12	0.12	0.12
Sat Flow, veh/h	1781	3554	79	1781	3554	1585	528	488	559	359	284	938
Grp Volume(v), veh/h	61	608	635	9	834	54	31	0	0	59	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1856	1781	1777	1585	1576	0	0	1580	0	0
Q Serve(g_s), s	0.7	9.9	9.9	0.1	6.5	0.7	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.7	9.9	9.9	0.1	6.5	0.7	0.7	0.0	0.0	1.3	0.0	0.0
Prop In Lane	1.00		0.04	1.00		1.00	0.52		0.35	0.34		0.59
Lane Grp Cap(c), veh/h	495	973	1016	332	1773	791	318	0	0	303	0	0
V/C Ratio(X)	0.12	0.62	0.62	0.03	0.47	0.07	0.10	0.00	0.00	0.19	0.00	0.00
Avail Cap(c_a), veh/h	621	2094	2188	544	4189	1868	904	0	0	905	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	4.8	6.5	6.5	5.8	6.9	5.5	16.6	0.0	0.0	16.9	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.7	0.6	0.0	0.2	0.0	0.1	0.0	0.0	0.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	2.4	2.5	0.0	1.7	0.2	0.2	0.0	0.0	0.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	4.9	7.2	7.2	5.8	7.1	5.5	16.7	0.0	0.0	17.2	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	B	A	A	B	A	A
Approach Vol, veh/h		1304			897			31			59	
Approach Delay, s/veh		7.1			7.0			16.7			17.2	
Approach LOS		A			A			B			B	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		9.5	5.0	27.5		9.5	7.0	25.4				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		21.5	5.5	49.5		21.5	5.5	49.5				
Max Q Clear Time (g_c+I1), s		2.7	2.1	11.9		3.3	2.7	8.5				
Green Ext Time (p_c), s		0.1	0.0	11.1		0.2	0.0	7.3				

Intersection Summary												
HCM 6th Ctrl Delay			7.4									
HCM 6th LOS			A									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	68	1192	22	5	1181	89	13	2	3	32	2	82
Future Volume (veh/h)	68	1192	22	5	1181	89	13	2	3	32	2	82
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	85	1324	24	6	1312	111	16	2	4	38	2	96
Peak Hour Factor	0.80	0.90	0.90	0.80	0.90	0.80	0.80	0.80	0.80	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	363	2174	39	302	1953	871	254	38	39	128	19	144
Arrive On Green	0.07	0.61	0.61	0.01	0.55	0.55	0.13	0.13	0.13	0.13	0.13	0.13
Sat Flow, veh/h	1781	3571	65	1781	3554	1585	1057	291	300	317	144	1107
Grp Volume(v), veh/h	85	659	689	6	1312	111	22	0	0	136	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1859	1781	1777	1585	1648	0	0	1568	0	0
Q Serve(g_s), s	1.0	12.3	12.3	0.1	14.0	1.8	0.0	0.0	0.0	2.5	0.0	0.0
Cycle Q Clear(g_c), s	1.0	12.3	12.3	0.1	14.0	1.8	0.6	0.0	0.0	4.3	0.0	0.0
Prop In Lane	1.00		0.03	1.00		1.00	0.73		0.18	0.28		0.71
Lane Grp Cap(c), veh/h	363	1082	1132	302	1953	871	331	0	0	290	0	0
V/C Ratio(X)	0.23	0.61	0.61	0.02	0.67	0.13	0.07	0.00	0.00	0.47	0.00	0.00
Avail Cap(c_a), veh/h	494	1684	1761	472	3234	1443	683	0	0	681	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.5	6.5	6.5	6.0	8.6	5.8	20.4	0.0	0.0	22.0	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.6	0.5	0.0	0.4	0.1	0.1	0.0	0.0	1.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	3.2	3.3	0.0	4.1	0.5	0.2	0.0	0.0	1.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.8	7.0	7.0	6.1	9.0	5.9	20.5	0.0	0.0	23.2	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	C	A	A	C	A	A
Approach Vol, veh/h		1433			1429			22			136	
Approach Delay, s/veh		7.0			8.7			20.5			23.2	
Approach LOS		A			A			C			C	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		11.4	4.9	36.9		11.4	8.1	33.8				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		20.5	5.5	50.5		20.5	7.5	48.5				
Max Q Clear Time (g_c+I1), s		2.6	2.1	14.3		6.3	3.0	16.0				
Green Ext Time (p_c), s		0.0	0.0	12.5		0.6	0.1	13.2				

Intersection Summary												
HCM 6th Ctrl Delay			8.6									
HCM 6th LOS			A									

SADDLE ROCK CROSSING
SOLDIERS PASS ROAD/STATE ROUTE 89A
TRAFFIC IMPACT ANALYSIS

APPENDIX

Approved ADOT TIA Presubmittal Form

Exhibit 240-A. Traffic Impact Analysis Pre-Submittal Form

Project Name: Saddle Rock Crossing
Developer/Owner: Baney Corporation/Curt Baney
Phone Number: 541.382.2188
Email: curtb@oxfordsuites.com

Project Location
State Route (with nearest MP or Street): SR 89 (Soldiers Pass Road, MP 373)
Local Jurisdiction: Sedona

Stage of Development (choose one)

☐ Planning/Zoning ■ Development Plan

Brief Description of Project (land use, intensity, timeframe/phasing)

The project includes the construction of a 5,400 square foot high turnover restaurant, 100 room hotel, 20,000 square feet of specialty retail space, and 12 apartments on undeveloped land on the south side of the Soldiers Pass Road/SR 89a intersection in Sedona, Arizona.

Proposed Access (number, location, restrictions)

The site will be served by five (5) access points. One (1) access point will be located on SR 89 and will align with Soldiers Pass Road. Two (2) access points will be located on Saddle Rock Circle and two (2) will be located on Elk Road.

Preliminary Assumptions (provide as attachment)

- Trip Generation
- Study Horizon Years
- Trip Distribution
- Pass-By Or Internal Capture
- Future Roadway Network
- Study Area Intersections

Traffic Study Type (choose one)

☐ Transportation Planning Study
■ Traffic Impact Analysis
☐ Traffic Impact Statement

Traffic Study Preparer
Firm Name: Southwest Traffic Engineering, LLC
Contact: Andrew Smigielski PE, PTOE, PTP
Phone: (602) 266-7983
Email: smig@swte.us

Pre-Submittal Forms are not required for each project but are a useful tool to reduce the number of submittals/reviews and aid development timeframes. When submitted, Regional Traffic Engineering staff will review and confirm the form in a timely manner. Changes to the above information should be provided in writing. A hard copy of an approved Pre-Submittal Form shall be included in the Study appendix.

Approval by: Robert LaJeunesse Date: 10-30-19

SOUTHWEST TRAFFIC ENGINEERING, LLC

PARKING ANALYSIS

SADDLE ROCK CROSSING

SOLDIERS PASS ROAD/STATE ROUTE 89A (SR 89A)

25 MAY 2021

PREPARED FOR

BANEY CORPORATION
475 NE BELLEVUE DRIVE, SUITE S210
BEND, OREGON 97701

SOUTHWEST TRAFFIC ENGINEERING, LLC
3838 NORTH CENTRAL AVENUE, SUITE 1810
PHOENIX, AZ 85012
T 602.266.SWTE (7983) F 602.266.1115

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Prepared By;
Andrew Smigielski, PE, PTOE, PTP
Parker Murphy, EIT

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Peak Parking Demand Calculations

SADDLE ROCK CROSSING
SOLDIERS PASS ROAD/SR 89A
PARKING ANALYSIS

Project Description

The Baney Corporation is proposing to develop the property immediately south of the intersection of Soldiers Pass Road/State Route 89A (SR 89A) in Sedona, Arizona. The vicinity of the project is shown in **Figure 1**. The site will be located as shown in **Figure 2**. The site proposes the construction of 40-units of multifamily housing; a 122-room hotel, eight (8) of which are suite accommodation only; a 985 square foot public, rooftop bar; and a 3,000 square foot high-turnover sit-down restaurant. The purpose of this parking analysis is to determine the parking needs/requirements of the fully completed development.

The author of this report is a registered Professional Engineer (Civil) in the State of Arizona having specific expertise and experience in the preparation of parking analyses.

Study Methodology

In order to analyze and evaluate the parking requirements for the project:

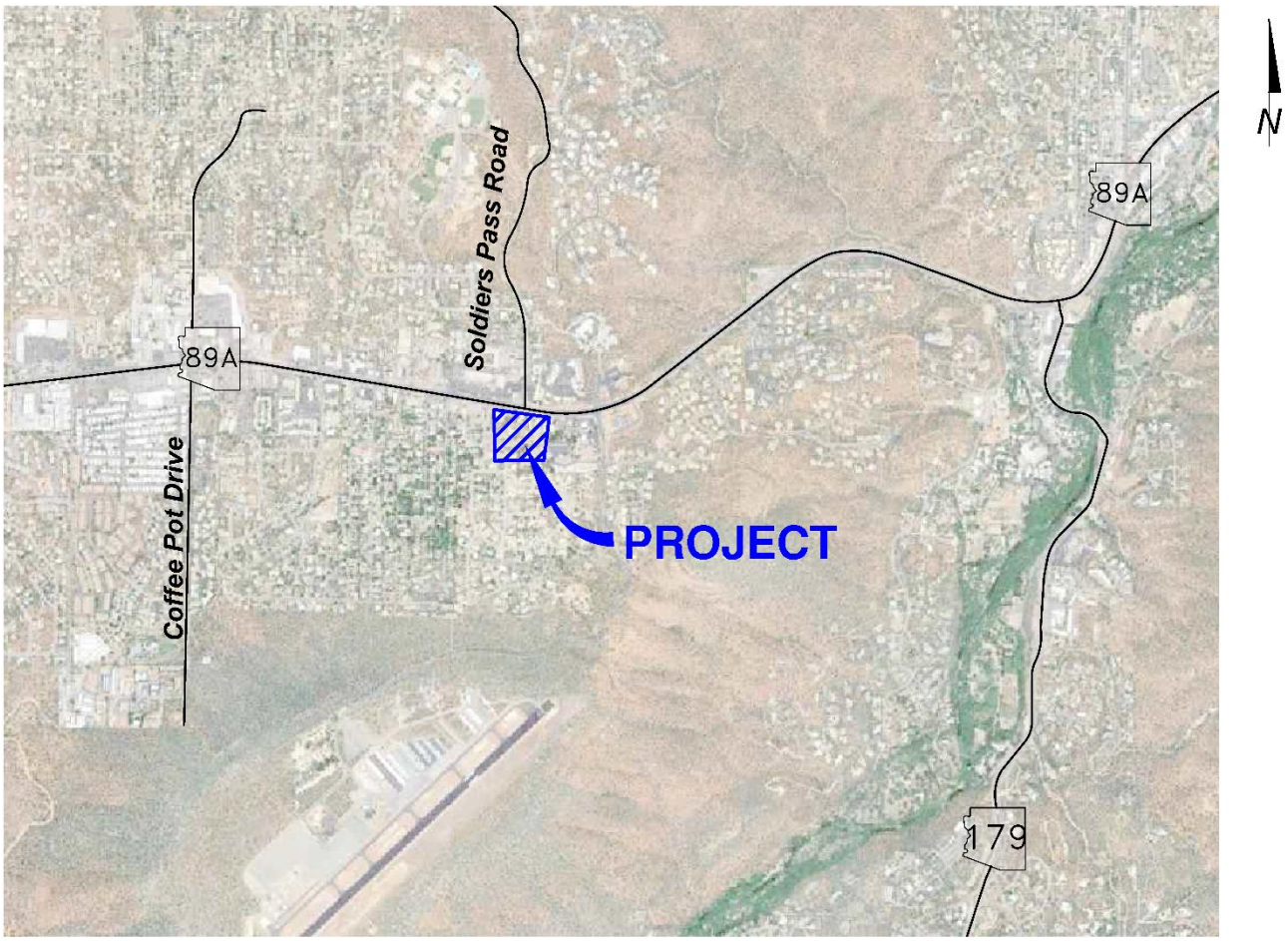
- A review of the site plan was performed to determine the various types of existing/proposed land uses and to define distinct parking zones within the site.
- The various land uses and associated building sizes were determined for each parking zone as well as the proposed number of parking spaces for each parking zone.
- A review of City of Sedona and Institute of Transportation Engineers (ITE) parking requirements was performed to determine the parking ratios for each proposed land use.
- The required number of parking spaces was determined for each land use.
- A shared parking (interaction) evaluation was completed for the project site.
- Peak parking demand analyses were performed for each parking zone.

Proposed Development

The Saddle Rock Crossing project will be served by two driveways: one will form the south leg of the existing intersection of Soldiers Pass Road/SR 89A and one along Saddlerock Circle and will provide 210 total parking stalls.

Figure 3 shows the parking zones analyzed within the proposed Saddle Rock Crossing site. Zone 1 provides 21 surface parking stalls and two bus bays (which can also be used for twelve regular vehicle parking spaces), Zone 2 encompasses the remaining 177 parking spaces in a two-tiered parking structure. Due to the configuration of the site, Zone 1 is expected be exclusively used by the hotel land use and its guests, while Zone 2 will accommodate parking demand for the hotel, restaurant, rooftop bar, and the onsite residences.

Figure 1 – Vicinity Map



LEGEND:

EXISTING ROAD

PROJECT SITE

LOBBY / RESTAURANT

HOTEL: 76 guest rooms.

HOTEL: 38 guest rooms
Basement/ Business Center

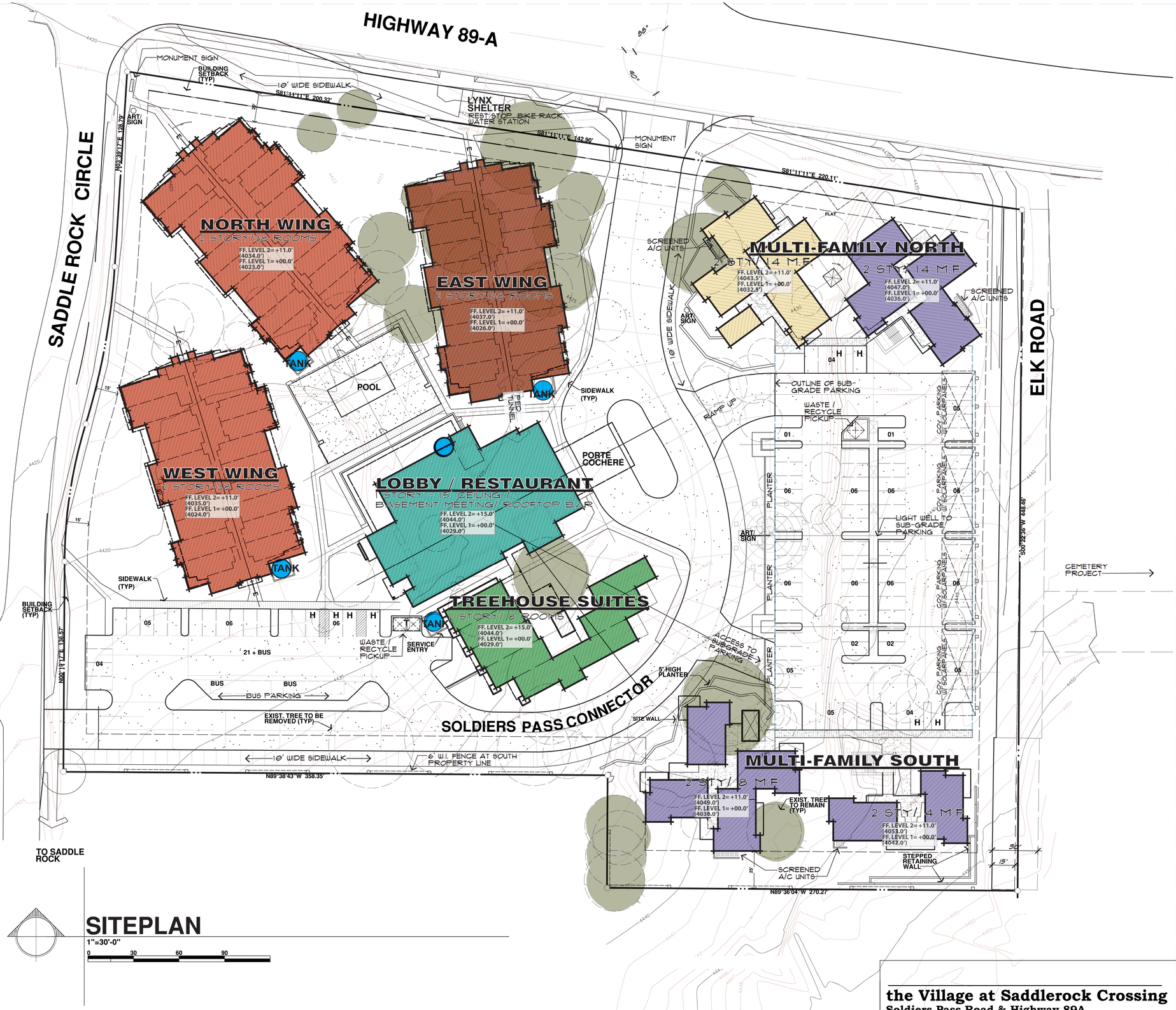
HOTEL: 8 guest rooms.
Treehouse Suites

MULTI-FAMILY:
26 units

MULTI-FAMILY
14 units (Workforce)

Building/ Description:	Units		Area		Parking required		
HOTEL ELEMENT							
Lobby / Treehouse Suites							
Lobby / Restaurant		Level 1	14000		Restaurant - 3000 s.f.		
		Level 2	8400		*1 space / 100 s.f.*	30	sp.
		Basement	14000		Bar- 985 s.f.		
		Subtotal	**36,400**		*1 space / 250 s.f.*	4	sp.
Hotel - Treehouse		Level 1	5550		Lodging- 8 units		
		Level 2	5550		*1 space / unit*	8	sp.
		Subtotal	**11,100**		Additional spaces	10	sp.
PLAN KEY	*8*	Lodging Units					
East Wing							
Hotel Guest Rooms		Level 1	11500		Lodging- 38 units		
		Level 2	10000		*1 space / unit*	38	sp.
		Basement	12000				
		Subtotal	**33,500**				
PLAN KEY	*38*	Lodging Units					
North Wing							
Hotel Guest Rooms		Level 1	11500		Lodging- 38 units		
		Level 2	10000	s.f.	*1 space / unit*	38	sp.
		Subtotal	**21,500**	s.f.			
PLAN KEY	*38*	Lodging Units					
West Wing							
Hotel Guest Rooms		Level 1	11500		Lodging- 38 units		
		Level 2	10000	s.f.	*1 space / unit*	38	sp.
	38	Subtotal	**21,500**	s.f.			
PLAN KEY	*38*	Lodging Units					
MULTI-FAMILY ELEMENT							
Multi-Family - South							
Multi-Family units		Level 1	5900		Dwelling, Multifamily		
		Level 2	5900	s.f.	Studio - 24 units		
	12	Subtotal	**11,800**	s.f.	*1 space / unit*	24	sp.
PLAN KEY					1 Bedroom- 4 units		
					1.25 spaces / unit	5	sp.
	12	Multi Family Units			2 Bedroom - 12 units		
Multi-Family - North					*1.75 spaces / unit*	21	sp.
Multi-Family units		Level 1	7600				
(Incl. Workforce)		Level 2	7050	s.f.			
	28	Subtotal	**14,650**	s.f.			
PLAN KEY	*28*	Multi Family Units					
		Total Bldg Area:	**150,450**	**s.f.**	**Parking Required:**	**216**	**sp.**
					Parking Provided:	**210**	**sp.**
Total Lodging Units:	**122**	**Lodging Units**					
Total Multi Family Units:	**40**	**Multi Family Units**					

SHEET INDEX:



SITEPLAN

1"=30'-0"

0 30 60 90

the Village at Saddlerock Crossing
Soldiers Pass Road & Highway 89A
Sedona Arizona

Stephen Thompson Architect. Sedona/Del Mar
Studio@StephenThompsonArchitect.com
C: 928.301.5922

4/19/2021

2/25/2021 7:54:53 AM

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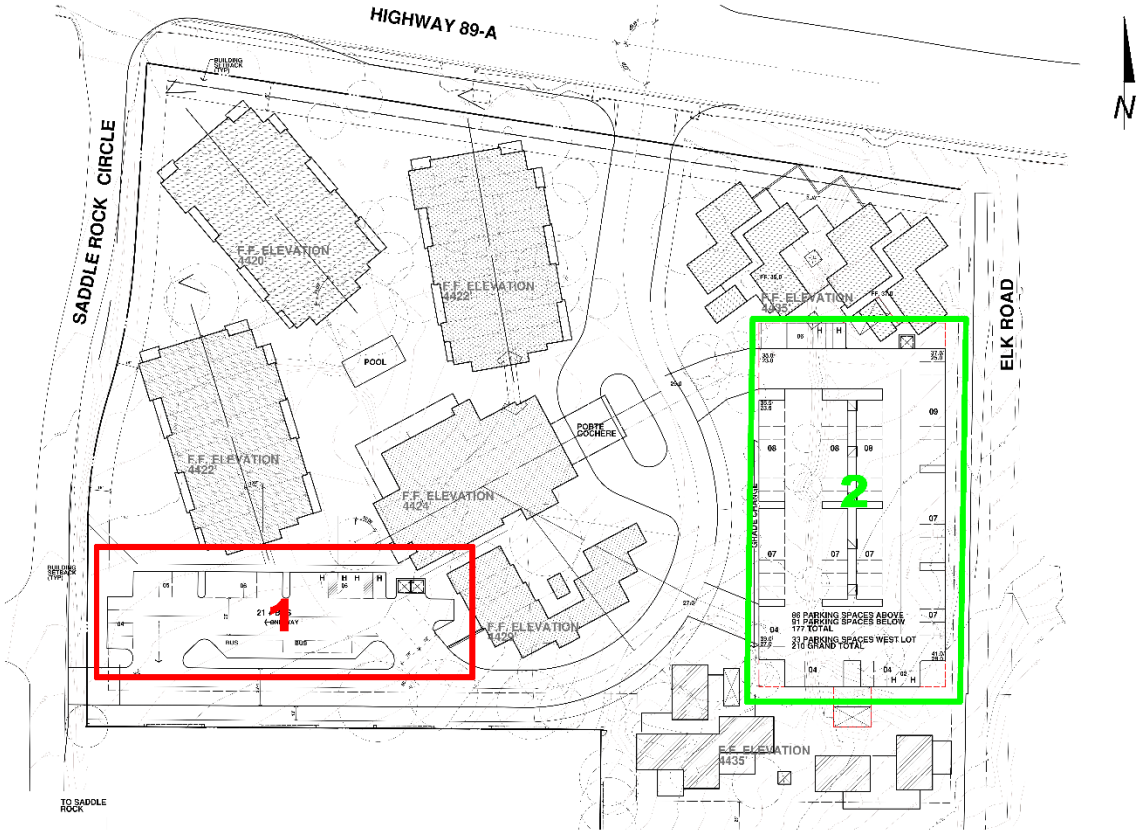
Figure 3 – Parking Zones



Local Parking Requirements

City of Sedona provides parking requirements for various land uses in their *Sedona City Code Chapter 5.5 – Off-Street Parking and Loading* and are shown in **Table 1**. Per Section D.4 of the city code, bus parking areas are credited as six standard spaces each which may be counted to "satisfy the required number of off-street parking spaces." Furthermore, the City of Sedona requires "bike racks, bike lockers, or similar parking facilities" to accommodate bicycles at a ratio of one bicycle space per ten vehicle parking spaces.

Table 1 – City of Sedona Parking Requirements

Land Use		Size	City of Sedona Parking Requirements	Minimum Parking Spaces
Dwelling, Multifamily	Studio	24 units	1 spaces per unit	24
	1 Bedroom	4 units	1.25 spaces per unit	5
	2 Bedroom	12 units	1.75 spaces per unit	21
Lodging	Medium-Density	122 units	1 spaces per unit and an additional 10 spaces	132
Food and Beverage Service	Restaurant	3,000 sq.ft.	1 spaces per 100 square feet	30
	Bar	985 sq.ft.	1 spaces per 250 square feet	4
			TOTAL VEHICLE SPACES	**216**
			TOTAL BICYCLE SPACES	**22**

As shown in **Table 1**, City of Sedona parking requirements show a minimum of 216 parking spaces to serve the proposed Saddle Rock Crossing site. This requirement is 6 parking spaces more than the 210 parking stalls currently proposed.

The Saddle Rock Crossing site should provide no less than 22 bicycle parking stalls throughout the site.

National Parking Ratio Evaluation

Based on City of Sedona requirements, the Saddle Rock Crossing site currently proposes 6 fewer parking spaces than will be required. National parking rates established by the Institute of Transportation of Engineering (ITE) were calculated to provide a comparison to the City of Sedona requirements and the currently proposed 210 parking spaces.

Multi-family, hotel, and restaurant establishments in North America have been analyzed to identify average rates of peak parking demand for weekday and weekend periods. These results have been compiled into the ITE *Parking Generation Manual, 5th Edition* (January 2019).

Tables 2 and **3** show the peak parking demand rates from ITE during the weekday and weekend peak periods, respectively. Where the number of studies presented within the data exceeded twenty sites, the parking requirements and calculations were based on the fitted curve equation opposed to the average rate provided.

Table 2 – Weekday ITE Parking Requirements

Land Use	Size	Weekday ITE Parking Requirements	Minimum Parking Spaces
Multifamily Housing (Low-Rise), LUC 220	24 units	Ln(P) = 0.99Ln(units) + 0.15	28
	4 units		5
	12 units		14
Hotel, LUC 310	114 units	Ln(P) = 0.90Ln(units) + 0.26	23
All Suites Hotel, LUC 311	8 units	0.77 spaces per unit	7
High-Turnover (Sit Down) Restaurant, LUC 932	3,000 sq.ft.	9.44 spaces per 1,000 sq ft	29
	985 sq.ft.		10
		TOTAL	**116**

Table 3 – Weekend ITE Parking Requirements

Land Use	Size	Weekend ITE Parking Requirements	Minimum Parking Spaces
Multifamily Housing (Low-Rise), LUC 220	24 units	Ln(P) = 0.90Ln(units) + 0.79	39
	4 units		8
	12 units		21
Hotel, LUC 310	114 units	1.15 spaces per unit	23
All Suites Hotel, LUC 311	8 units	0.91 spaces per unit	8
High-Turnover (Sit Down) Restaurant, LUC 932	3,000 sq.ft.	12.28 spaces per 1,000 sq ft	37
	985 sq.ft.		13
		TOTAL	**149**

As shown in **Tables 2** and **3**, the parking rates established by ITE result in a minimum parking space requirement of 116 parking spaces on weekdays and 149 parking spaces on weekends. The currently proposed 210 parking spaces will adequately accommodate both the weekday and weekend ITE peak parking demands.

Shared Parking Evaluation

Table 1 shows that the total number of required parking spaces for the site is 216 based on the separate land uses outlined for the City of Sedona off-street parking requirements. With a total of 210 parking spaces proposed with the Saddle Rock Crossing site, the minimum parking spaces required is expected to exceed the proposed spaces by 6 parking stalls, based on the application of separate land use calculations. The total number of 'minimum required' parking spaces for the site is the combined total of the parking space requirements for each individual land use and is an oversimplification of the actual parking needs of a mixed-use development.

Many municipal agencies in the State of Arizona, including the City of Sedona, allow for the consideration of shared parking interaction within a mixed-use development. Shared parking interaction is the concept of different businesses using the same parking space as the vehicle driver visits multiple locations after parking. For example, it would be quite common for someone staying at a hotel to walk to an adjacent restaurant and eat dinner. This patron would only be using one parking spot, assuming they commuted to the development via a passenger vehicle.

Generally accepted shared parking interaction factors in mixed-use developments range from 10% to 30%. However, the City of Sedona does not provide specific requirements for shared parking interactions. To provide a conservative analysis, the low end of this range (10%) was assumed for the Saddle Rock Crossing development. The result of this 10% shared parking interaction is presented in **Table 4**. It should be mentioned that a shared parking interaction factor was not applied to parking areas serving one lane use or for residential portions of this site, as resident parking will be reserved at all times.

Table 4 – Saddle Rock Crossing Shared Parking (Interaction)

Land Use		Size	City of Sedona Minimum Parking Requirement	Shared Parking Reduction (10%)
Dwelling, Multifamily	Studio	24 units	24	24*
	1 Bedroom	4 units	5	5*
	2 Bedroom	12 units	21	21*
Lodging	Medium-Density	122 units	132	119
Food and Beverage Service	Restaurant	3,000 sq.ft.	30	27
	Bar	985 sq.ft.	4	4
* no reduction applied		**TOTAL**	**216**	**200**

As shown in **Table 4**, based on City of Sedona parking requirements and a 10% shared parking interaction, vehicles within Saddle Rock Crossing site are anticipated to require 200 parking spaces per day which is expected to be adequately accommodated by the 210 parking stalls currently proposed.

Peak Parking Evaluation

Taking the parking calculations another step further, a peak parking demand analysis was completed for each parking zone within Saddle Rock Crossing. Each proposed land use has a distinct high parking demand time. For example, offices and employment centers experience peak parking during working hours. Retail and restaurant developments usually experience peaks during the midday, while fitness centers are expected to experience peaks in the evening.

The Urban Land Institute (ULI) provides nationally agreed upon peak parking demand data for multiple land uses, including those proposed within the Saddle Rock Crossing development. This data is used by many jurisdictions within the State of Arizona. ULI peak parking demand data was applied to the parking space requirements (with 10% reduction) for the project site based on City of Sedona guidelines (shown in **Table 4**) and are summarized in **Table 5**. Peak parking rates were then also applied to the parking demand estimated by ITE, as shown in **Table 6**. Complete calculations can be found in the Appendix.

Table 5 – Peak Parking Demand (City of Sedona)

Zone/Land Use		Proposed Parking Spaces	City of Sedona Peak Parking Demand	
			Weekday	Weekend
Zones 1+2	*One or two-family residence; multiple dwellings; efficiency units; one-bedroom units; two or more bedroom units.*	210	193	196
	Hotels, motels			
	Restaurants, bars, cocktail lounges			
	TOTAL	**210**	**193**	**196**

Table 6 – Peak Parking Demand (ITE)

Zone/Land Use		Proposed Parking Spaces	ITE Peak Parking Demand	
			Weekday	Weekend
Zones 1+2	*One or two-family residence; multiple dwellings; efficiency units; one-bedroom units; two or more bedroom units.*	210	107	136
	Hotels, motels			
	Restaurants, bars, cocktail lounges			
	TOTAL	**210**	**107**	**136**

As shown in **Tables 5** and **6**, the proposed 210 parking spaces are expected to adequately accommodate the peak parking demands on weekday and weekends.

Conclusion

The Saddle Rock Crossing development proposes to construct 198 parking spaces and two bus bays, which may be credited to required parking as six (6) vehicles spaces per bus bay, for a total of 210 parking spaces. An on-site underground parking structure will house 125 of the proposed parking spaces. Based on the most basic application of the City of Sedona parking requirements, Saddle Rock Crossing will require 216 parking spaces (6 more than is proposed). After consideration of shared parking interactions based on the minimum parking calculations of the separate land uses within the proposed site, the required number of parking spaces is further reduced to 200 parking spaces (10 less than is proposed). Analysis of peak parking demand throughout the site show that a minimum of 210 parking spaces can be provided (10 less than is proposed).

The proposed 210 parking spaces within the Saddle Rock Crossing site are expected to adequately serve the weekday and weekend peak parking demands, based on City of Sedona and ITE parking requirements.

As busses or shuttles will be available to transport visitors staying at the hotel to the sites of natural beauty surrounding the City of Sedona, other visitor accommodations, and local recreational activities, parking requirements for the Saddle Rock Crossing development may experience further reduced demand.

SADDLE ROCK CROSSING
SOLDIERS PASS ROAD/SR 89A
PARKING ANALYSIS

APPENDIX

Peak Parking Demand Calculations

Oro Valley Village Center
Parking Analysis

ZONE 1+2

City of Sedona Requirements

Shared Interaction	10%
Multi-Modal Reduction	0%
Total Reduction	**10%**

Peak Parking Demands (Weekday)

Time	Residential	Casual Restaurant	Hotel
7:00	90%	0%	95%
8:00	85%	0%	90%
9:00	80%	0%	80%
10:00	75%	15%	70%
11:00	70%	40%	70%
12:00	65%	75%	65%
1:00	70%	75%	65%
2:00	70%	65%	70%
3:00	70%	40%	70%
4:00	75%	50%	75%
5:00	85%	75%	80%
6:00	90%	95%	85%
7:00	97%	100%	85%
8:00	98%	100%	90%
9:00	99%	100%	95%
10:00	100%	95%	95%
11:00	100%	75%	100%
12:00	100%	25%	100%

	Apartments	Casual Restaurant	Hotel	Total Zone
Required Parking	**50**	**34**	**132**	**216**
	45	0	113	158
	43	0	107	149
	40	0	95	135
	38	5	83	125
	35	12	83	130
	33	23	77	133
	35	23	77	135
	35	20	83	138
	35	12	83	130
	38	15	89	142
	43	23	95	160
	45	29	101	175
	49	31	101	180
	49	31	107	187
	50	31	113	193
	50	29	113	192
	50	23	119	192
	50	8	119	176
Peak Parking Demand	**50**	**31**	**119**	**193**

Peak Parking Demands (Saturday)

Time	Residential	Casual Restaurant	Hotel
7:00	90%	0%	90%
8:00	85%	0%	80%
9:00	80%	0%	70%
10:00	75%	0%	60%
11:00	70%	15%	60%
12:00	65%	50%	55%
1:00	70%	55%	55%
2:00	70%	45%	60%
3:00	70%	45%	60%
4:00	75%	45%	65%
5:00	85%	60%	70%
6:00	90%	90%	75%
7:00	97%	95%	75%
8:00	98%	100%	80%
9:00	99%	90%	85%
10:00	100%	90%	95%
11:00	100%	90%	100%
12:00	100%	50%	100%

	Apartments	Casual Restaurant	Hotel	Total Zone
Required Parking	**50**	**34**	**132**	**216**
	45	0	107	152
	43	0	95	137
	40	0	83	123
	38	0	71	109
	35	5	71	111
	33	15	65	113
	35	17	65	117
	35	14	71	120
	35	14	71	120
	38	14	77	128
	43	18	83	144
	45	28	89	162
	49	29	89	167
	49	31	95	175
	50	28	101	178
	50	28	113	190
	50	28	119	196
	50	15	119	184
Peak Parking Demand	**50**	**31**	**119**	**196**

NOTES:
The peak parking demand percentages utilized are obtained from Urban Land Institute (ULI) guidelines.

For the purposes of this Peak Parking Analysis:

1. A 10% reduction in the parking demand was taken to account for parking interaction (multiple store visits on one vehicle trip to the site, which requires only one parking space).
2. No parking reductions are applied to residential land uses.

Oro Valley Village Center
Parking Analysis

ZONE 1+2

ITE calculations

Shared Interaction	10%
Multi-Modal Reduction	0%
Total Reduction	**10%**

Peak Parking Demands (Weekday)

Time	Residential	Casual Restaurant	Hotel
7:00	90%	0%	95%
8:00	85%	0%	90%
9:00	80%	0%	80%
10:00	75%	15%	70%
11:00	70%	40%	70%
12:00	65%	75%	65%
1:00	70%	75%	65%
2:00	70%	65%	70%
3:00	70%	40%	70%
4:00	75%	50%	75%
5:00	85%	75%	80%
6:00	90%	95%	85%
7:00	97%	100%	85%
8:00	98%	100%	90%
9:00	99%	100%	95%
10:00	100%	95%	95%
11:00	100%	75%	100%
12:00	100%	25%	100%

	Apartments	Casual Restaurant	Hotel	Total Zone
Required Parking	**47**	**39**	**30**	**116**
	42	0	26	68
	40	0	24	64
	38	0	22	59
	35	5	19	59
	33	14	19	66
	31	26	18	74
	33	26	18	77
	33	23	19	75
	33	14	19	66
	35	18	20	73
	40	26	22	88
	42	33	23	99
	46	35	23	104
	46	35	24	105
	47	35	26	107
	47	33	26	106
	47	26	27	100
	47	9	27	83
Peak Parking Demand	**47**	**35**	**27**	**107**

Peak Parking Demands (Saturday)

Time	Residential	Casual Restaurant	Hotel
7:00	90%	0%	90%
8:00	85%	0%	80%
9:00	80%	0%	70%
10:00	75%	0%	60%
11:00	70%	15%	60%
12:00	65%	50%	55%
1:00	70%	55%	55%
2:00	70%	45%	60%
3:00	70%	45%	60%
4:00	75%	45%	65%
5:00	85%	60%	70%
6:00	90%	90%	75%
7:00	97%	95%	75%
8:00	98%	100%	80%
9:00	99%	90%	85%
10:00	100%	90%	95%
11:00	100%	90%	100%
12:00	100%	50%	100%

	Apartments	Casual Restaurant	Hotel	Total Zone
Required Parking	**68**	**50**	**31**	**149**
	61	0	25	86
	58	0	22	80
	54	0	20	74
	51	0	17	68
	48	7	17	71
	44	23	15	82
	48	25	15	88
	48	20	17	85
	48	20	17	85
	51	20	18	89
	58	27	20	104
	61	41	21	123
	66	43	21	130
	67	45	22	134
	67	41	24	132
	68	41	27	135
	68	41	28	136
	68	23	28	118
Peak Parking Demand	**68**	**45**	**28**	**136**

NOTES:
The peak parking demand percentages utilized are obtained from Urban Land Institute (ULI) guidelines.

For the purposes of this Peak Parking Analysis:

1. A 10% reduction in the parking demand was taken to account for parking interaction (multiple store visits on one vehicle trip to the site, which requires only one parking space).
2. No parking reductions are applied to residential land uses.

SOUTHWEST TRAFFIC ENGINEERING, LLC

TRAFFIC IMPACT ANALYSIS

SADDLE ROCK CROSSING

SOLDIERS PASS ROAD/STATE ROUTE 89A (SR 89A)

25 MAY 2021

PREPARED FOR

BANEY CORPORATION
475 NE BELLEVUE DRIVE, SUITE S210
BEND, OREGON 97701

SOUTHWEST TRAFFIC ENGINEERING, LLC
3838 NORTH CENTRAL AVENUE, SUITE 1810
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Traffic Counts
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Capacity Calculations
Approved ADOT TIA Presubmittal Form

Prepared By:
Andrew Smigielski, PE, PTOE, PTP
Parker Murphy, EIT

Executive Summary

The purpose of this traffic study is to evaluate the current and future transportation system within the project study area surrounding the site without and with the proposed Saddle Rock Crossing project.

Existing Traffic Data

The intersection of Saddlerock Circle/State Route 89A (SR 89A) currently experiences excessive delays for the northbound and southbound turning movements. Un-signalized minor approaches to high volume state highways tend to have their turning movements operate at level of service (LOS) E or F in the weekday peak hours due to the limited number of sufficient gaps for vehicles to complete a turning movement.

The remaining study intersections currently operate at adequate LOS.

Future Traffic Data Without the Project

The existing delays at the intersection of Saddlerock Circle/SR 89A are expected to continue and worsen in 2021 and 2024 without traffic from the Saddle Rock Crossing site.

The remaining study intersections are anticipated to continue to operate at adequate LOS.

Future Traffic Data With Project

The intersection of Saddlerock Circle/SR 89A is expected to continue to operate at an inadequate LOS with the addition of traffic volumes associated with the proposed project.

All remaining study intersections are expected to operate at an adequate LOS.

Turn Lane Analysis

No additional auxiliary turn lanes are warranted at the access points serving the Saddle Rock Crossing site.

Crash Analysis
Based on crash data retrieved from the ADOT database, fifteen (15) crashes have occurred at the intersection of Soldiers Pass Road/SR 89A in the five-year study (1 Jan 2015 – 31 Dec 2019) analyzed. Of these crashes, eight (8) were rear-end type collisions. These types of crashes are often due to driver inattention, failure to slow or stop, and are common at signalized intersections.

With limited crashes at the remaining study intersections, no specific crash trends can be identified.

Mitigation
The intersection of Saddlerock Circle/SR 89A currently experiences excessive delays for the northbound and southbound turning movements. Un-signalized minor approaches to high volume state highways tend to have their turning movements operate at LOS E or F in the weekday peak hours due to the limited number of sufficient gaps for vehicles to complete a turning movement. The installation of traffic signal would be expected to alleviate these delays.

However, due to the proximity of the intersection of Saddlerock Circle/SR 89A to the existing signalized intersection of Soldiers Pass Road/SR 89A, the installation of an additional traffic signal is not recommended. Traffic signals, when spaced too closely, often have a negative impact on traffic flow and can be difficult to coordinate. If excessive delays occur, drivers may, and will be able to, re-route themselves to the signalized intersection at Soldiers Pass Road/SR 89A to complete their left turning movements.

Project Description

Barney Corporation is proposing a mixed land use project south of Soldiers Pass Road/State Route 89A (SR 89A) in Sedona, Arizona. The project will include a 3,000 square foot high turnover restaurant, a 985 square foot rooftop bar, 122-room hotel (8 rooms of which are suite accommodation only), and 40 apartment units. The vicinity of the project is shown in **Figure 1**. The site will be located as shown in **Figure 2**. The Saddle Rock Crossing project will be served by one (1) access point on SR 89A, one access point on Saddlerock Circle, and two (2) access points on Elk Road.

The purpose of this traffic impact analysis is to:

- Evaluate the current and future operational characteristics of the adjacent roadway network surrounding the project site.
- Estimate the traffic generation associated with the project and assign that traffic to the existing roadway system.
- Analyze future traffic operations at three existing intersections and two proposed driveways serving the project area.
- Determine the need for auxiliary (left and right turn) lanes at the driveways that will directly serve the project site.
- Perform a crash analysis to identify any specific crash trends within the study area.

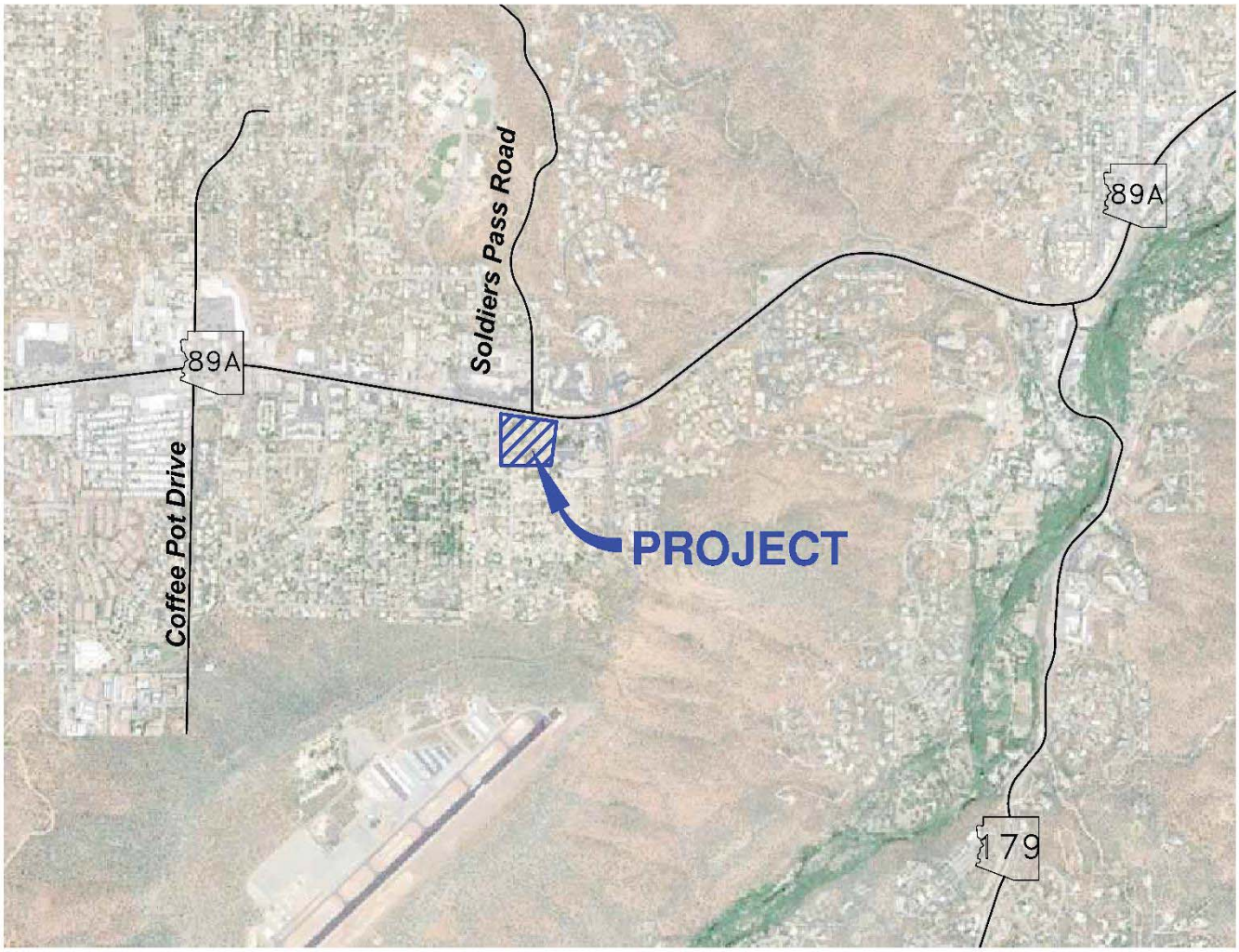
The author of this report is a registered Professional Engineer (Civil) in the State of Arizona having specific expertise and experience in the preparation of traffic impact analyses.

Study Methodology

In order to analyze and evaluate the potential traffic impacts of the proposed development, the following tasks were undertaken:

- Field observation of the proposed site and surrounding area was conducted to evaluate the existing physical and operational characteristics of the adjacent roadway network.
- Site traffic volumes generated by the proposed site were calculated using the *Institute of Transportation Engineers (ITE) Trip Generation Manual, 10th Edition,* 2017.
- Calculated site traffic was distributed based on existing traffic patterns and assigned to the primary roadways within the project study limits.
- Capacity analyses were performed for the existing conditions and future conditions without and with the project based on an opening year of 2021 and a horizon year of 2024 using methodology presented in the *2016 Highway Capacity Manual (HCM 6th)*.
- The need for auxiliary turn lanes at the study driveways was evaluated based on City of Sedona and Arizona Department of Transportation (ADOT) guidelines.
- Crash records were obtained from ADOT to identify any specific crash trends within the study area.

Figure 1 – Vicinity Map



LEGEND:

EXISTING ROAD

PROJECT SITE

LOBBY / RESTAURANT

HOTEL: 76 guest rooms.

HOTEL: 38 guest rooms
Basement/ Business Center

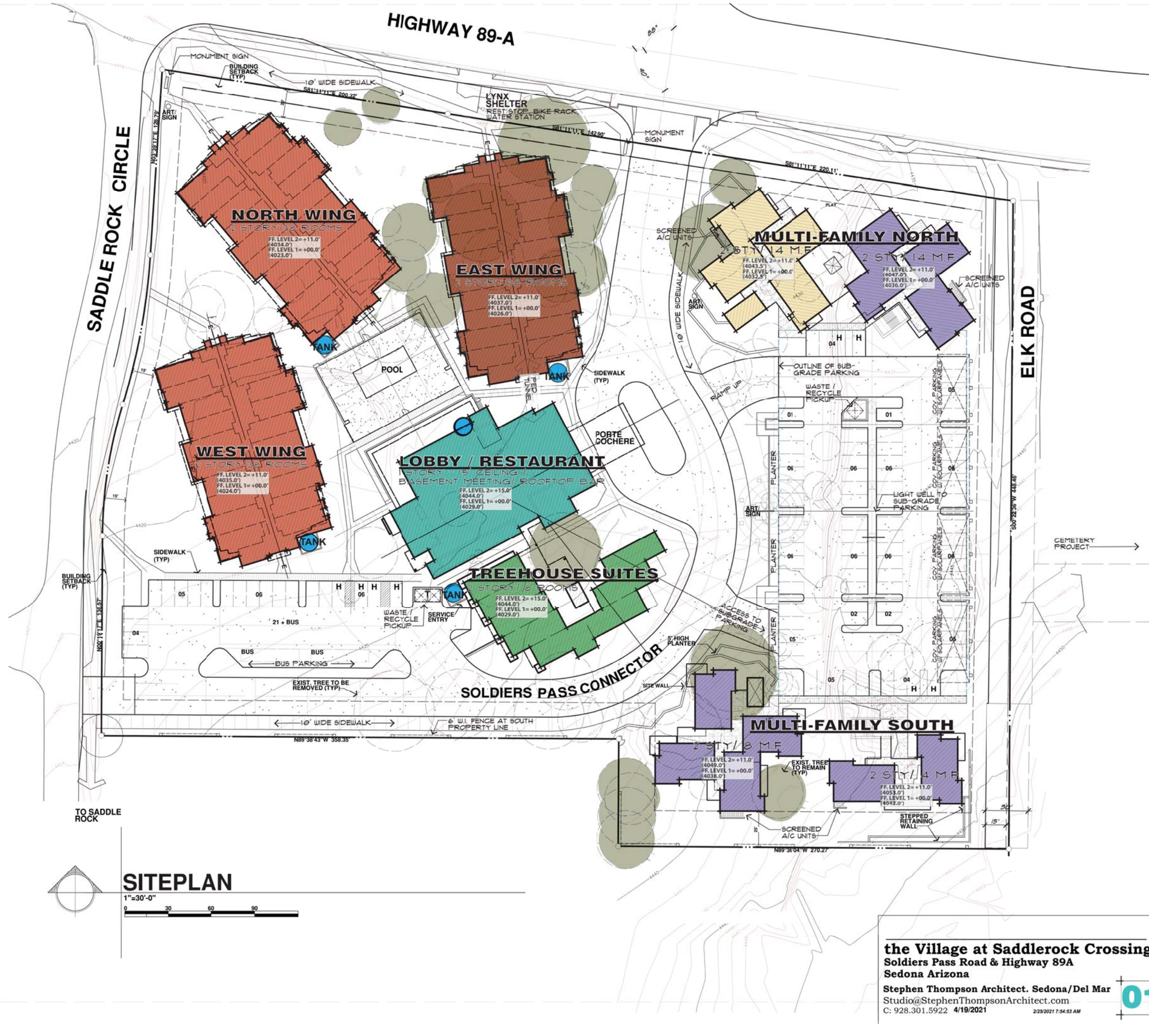
HOTEL: 8 guest rooms.
Treehouse Suites

MULTI-FAMILY:
26 units

MULTI-FAMILY
14 units (Workforce)

Building/ Description:		Units	Area		Parking required		
HOTEL ELEMENT							
Lobby / Treehouse Suites							
Lobby / Restaurant	Level 1		14000		Restaurant - 3000 s.f.		
	Level 2		8400		*1 space / 100 s.f.*	30	sp.
	Basement		14000		Bar- 985 s.f.		
	Subtotal		**36,400**		*1 space / 250 s.f.*	4	sp.
Hotel - Treehouse	Level 1		5550		Lodging- 8 units		
	Level 2		5550		*1 space / unit*	8	sp.
	Subtotal		**11,100**		Additional spaces	10	sp.
PLAN KEY		*8*	Lodging Units				
East Wing							
Hotel Guest Rooms	Level 1		11500		Lodging- 38 units		
	Level 2		10000		*1 space / unit*	38	sp.
	Basement		12000				
	Subtotal		**33,500**				
PLAN KEY		*38*	Lodging Units				
North Wing							
Hotel Guest Rooms	Level 1		11500		Lodging- 38 units		
	Level 2		10000	s.f.	*1 space / unit*	38	sp.
	Subtotal		**21,500**	s.f.			
PLAN KEY		*38*	Lodging Units				
West Wing							
Hotel Guest Rooms	Level 1		11500		Lodging- 38 units		
	Level 2		10000	s.f.	*1 space / unit*	38	sp.
	38 Subtotal		**21,500**	s.f.			
PLAN KEY		*38*	Lodging Units				
MULTI-FAMILY ELEMENT							
Multi-Family - South							
Multi-Family units	Level 1		5900		Dwelling, Multifamily		
	Level 2		5900	s.f.	Studio - 24 units		
	12 Subtotal		**11,800**	s.f.	*1 space / unit*	24	sp.
					1 Bedroom- 4 units		
					1.25 spaces / unit	5	sp.
PLAN KEY		*12*	Multi Family Units		2 Bedroom - 12 units		
					1.75 spaces / unit	21	sp.
Multi-Family - North							
Multi-Family units	Level 1		7600				
(Incl. Workforce)	Level 2		7050	s.f.			
	28 Subtotal		**14,650**	s.f.			
PLAN KEY		*28*	Multi Family Units				
	Total Bldg Area:		**150,450**	s.f.	**Parking Required:**	**216**	**sp.**
Total Lodging Units:	*122*	**Lodging Units**			**Parking Provided:**	**210**	**sp.**
Total Multi Family Units:	*40*	**Multi Family Units**					

SHEET INDEX:



SITEPLAN

1"=30'-0"

0 30 60 90

the Village at Saddlerock Crossing
Soldiers Pass Road & Highway 89A
Sedona Arizona

Stephen Thompson Architect. Sedona/Del Mar
Studio@StephenThompsonArchitect.com
C: 928.301.5922

4/19/2021

2/25/2021 7:54:53 AM

01

Existing Conditions

The proposed Saddle Rock Crossing project will be located on undeveloped land south of Soldiers Pass Road/SR 89A in Sedona, Arizona.

State Route 89A is a state highway that runs from Prescott to Flagstaff. Adjacent to the site, the highway provides two through lanes in each direction separated by a two-way center left turn lane. Curb, gutter, sidewalk, bike lanes, and street lighting are present along SR 89A. The speed limit of the roadway is 35 miles per hour (mph) near the project site.

Soldiers Pass Road is a two-lane road that extend north from SR89A. The roadway mainly serves residential land use. Curb and gutter are present on both sides of Soldiers Pass Road, with sidewalk present on the west side. The speed limit of the roadway is 25 mph.

Saddlerock Circle is a two-lane roadway that provides access to a residential area. On-street parking is permitted on the roadway. No speed limit is posted on Saddlerock Circle.

Elk Road serves commercial developments south of SR 89A and offers one lane for each direction of travel. On-street parking is allowed on the majority of Elk Road. No posted speed limit is present on the roadway.

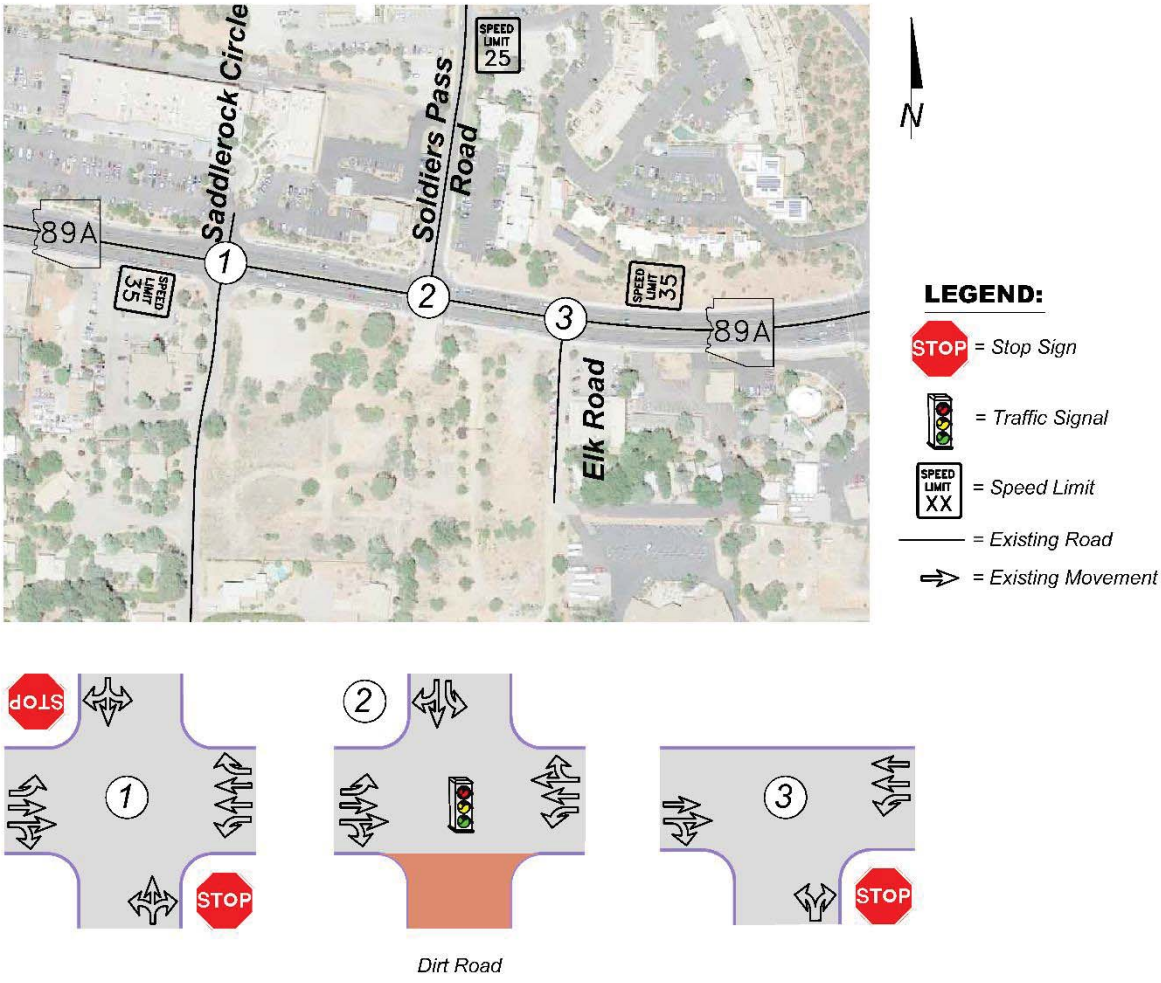
Soldiers Pass Road/SR 89A is a four-legged signalized intersection. Eastbound traffic makes use of an exclusive left turn lane, a through lane, and a shared through/right turn lane. The westbound approach to the intersection is provided with an exclusive left turn lane, one through lanes, and a shared through/right turn lane. Southbound vehicles utilize an exclusive left turn lane and a shared through/right turn lane. The northbound approach to an intersection is unpaved and provides access to an undeveloped parcel where drivers from adjacent properties cut through to use the traffic signal. Eastbound and westbound protected/permitted left turn phasing is provided at the intersection. Northbound and southbound left turn movements operate under permitted only traffic signal phasing.

Saddlerock Circle/SR 89A is a four-legged un-signalized intersection. Eastbound vehicles are provided with a two-way center left turn lane, one through lane, and one shared through/right turn lane. Westbound traffic makes use of a two-way center left turn lane, two through lanes, and an exclusive right turn lane. Northbound and southbound vehicles are STOP controlled and are offered a shared left/through/right lane. The north leg of the intersection serves as a driveway to retail/commercial developments.

Elk Road/ SR 89A is a three-legged un-signalized intersection. The eastbound approach to the intersection makes use of one through lane and a shared through/right turn lane. Westbound traffic is offered a two-way center left turn lane and two through lanes. Northbound vehicles are STOP controlled and utilize a shared left/right turn lane.

The study intersection locations, lane configurations, and intersection control are shown in **Figure 3**.

Figure 3 – Existing Lane Configurations and Traffic Control



Existing Traffic Data

In order to form a basis for analysis of the project impacts, weekday AM and PM peak hour turning movement counts were conducted at the intersections of Saddlerock Circle/SR 89A, Soldiers Pass Road/SR 89A, and Elk Road/SR 89A.

The weekday turning movement counts were conducted from 7:00 AM to 9:00 AM and 4:00 PM to 6:00 PM. All traffic data was collected in October 2019 while school was in session.

The existing weekday AM/PM peak hour traffic volumes are shown in **Figure 4**. Complete traffic count data can be found in the Appendix.

Additionally, 48-hour bi-directional vehicle speed counts were taken on Saddlerock Circle, north of June Big Circle. **Table 1** shows the average speeds and portion of drivers traveling over 25 mph, 30 mph and over, and 35 mph and over in the section of roadway analyzed. Complete vehicle speed count summaries can be found in the Appendix.

Table 1 – Vehicle Speed Breakdown

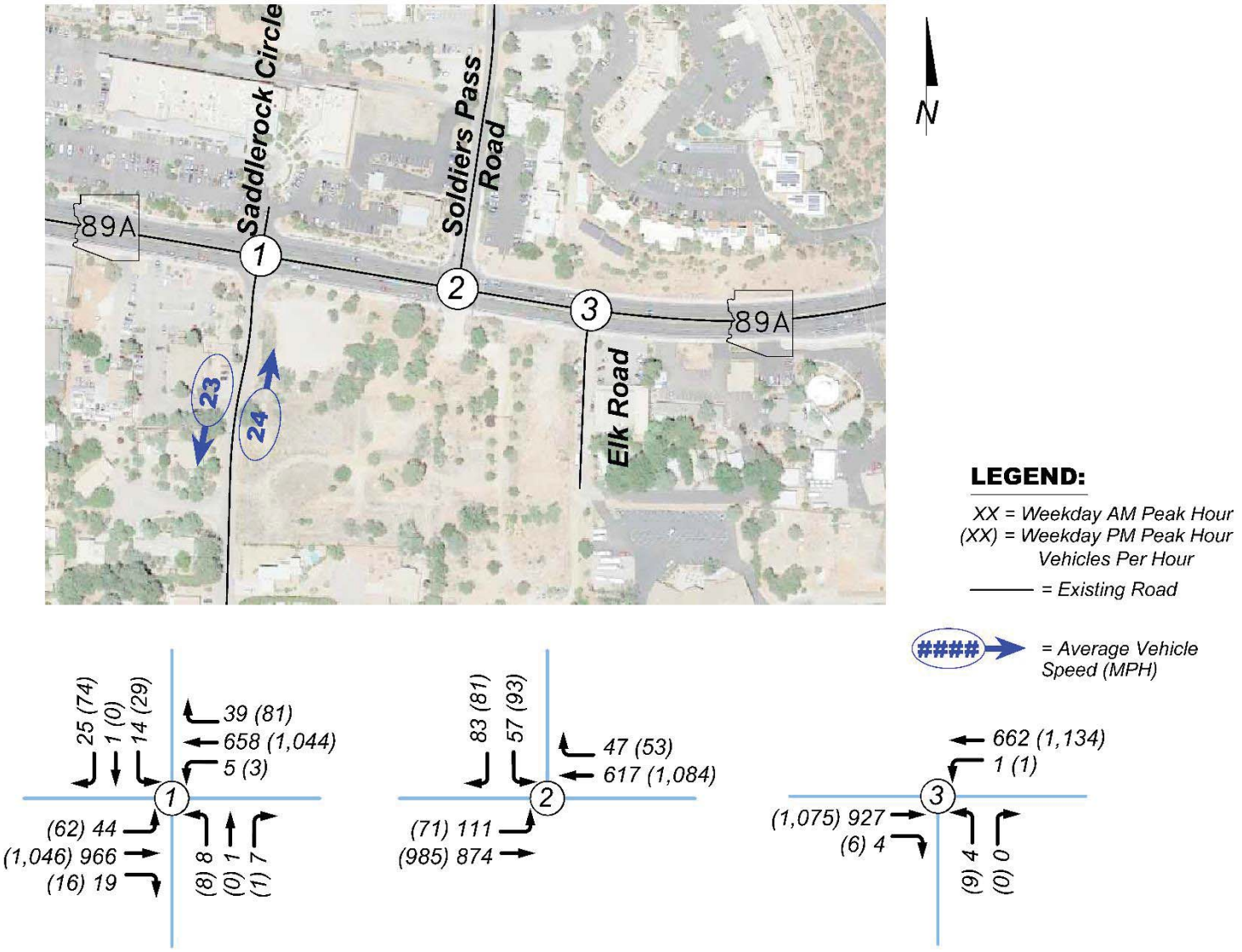
Location	Average Speed (MPH)	% over 25 MPH	% over 30 MPH	% over 35 MPH
Saddlerock Circle, between Junebug Circle and SR 89A				
Northbound	24	36.0%	7.3%	0.0%
Southbound	23	26.5%	2.9%	0.5%
Average	23	30.7%	4.8%	0.3%

MPH - Miles Per Hour

As shown in **Table 1**, motorists on Saddlerock Circle travel at an average speed of 23 to 24 mph with a northbound-southbound average of 69.3% of vehicles traveling under 25 mph.

A survey of various cities in Arizona that perform vehicle speed studies in neighborhoods indicates that drivers tend to select speeds somewhat higher than the posted speed limit, generally traveling at an average of 3 to 7 mph over the posted speed limit. Furthermore, it has been found that about ten to fifteen percent of motorists on residential streets exceed the speed limit by more than ten mph. While there is no posted speed limit in the immediate vicinity of this location, the speed data collected is consistent with the expectation of vehicles speeds on residential roadways.

Figure 4 – Existing Weekday Peak Hour Traffic Volumes



Access

The Saddle Rock Crossing project will be served by two driveways: one will form the south leg of the existing intersection of Soldiers Pass Road/SR 89A and one along Saddlerock Circle.

The south leg of the existing intersection of Soldiers Pass Road/SR 89A will serve as the main access point for the proposed development. Northbound vehicles will be provided with an exclusive left turn lane and a shared through/right turn lane.

West Driveway will be located on the east side of Saddlerock Circle, approximately 200 feet south of SR 89A. Vehicles exiting the site westbound will be provided a shared left turn/right turn lane. Northbound vehicles will be offered a shared through/right turn lane while southbound traffic will make use of a shared left turn/through lane.

Figure 5 shows the locations, geometry and spacing for the proposed driveways serving the project site that will serve as a baseline of analysis in the report.

Trip Generation

Trip generation was developed utilizing nationally agreed upon data contained in the Institute of Transportation Engineers (ITE) publication *Trip Generation, 10th Edition*, 2017. The Saddle Rock Crossing project trip generation was based on the following land uses and corresponding ITE Land Use Codes (LUCs):

- 40 apartment units (LUC 220, Multi-Family Housing (Low-Rise))
- 114-room hotel, (LUC 310, Hotel)
- 8 hotel suite rooms (LUC 311, All Suite Hotel)
- 985 square foot rooftop bar (LUC 925, Drinking Place)
- 3,000 square foot Restaurant (LUC 932, High-Turnover (Sit-down) Restaurant)

The result is the expected weekday trip generation for the project as shown in **Table 2**. The complete trip generation calculations can be found in the Appendix.

Figure 5 – Baseline Access Point and Intersection Configuration Assumptions

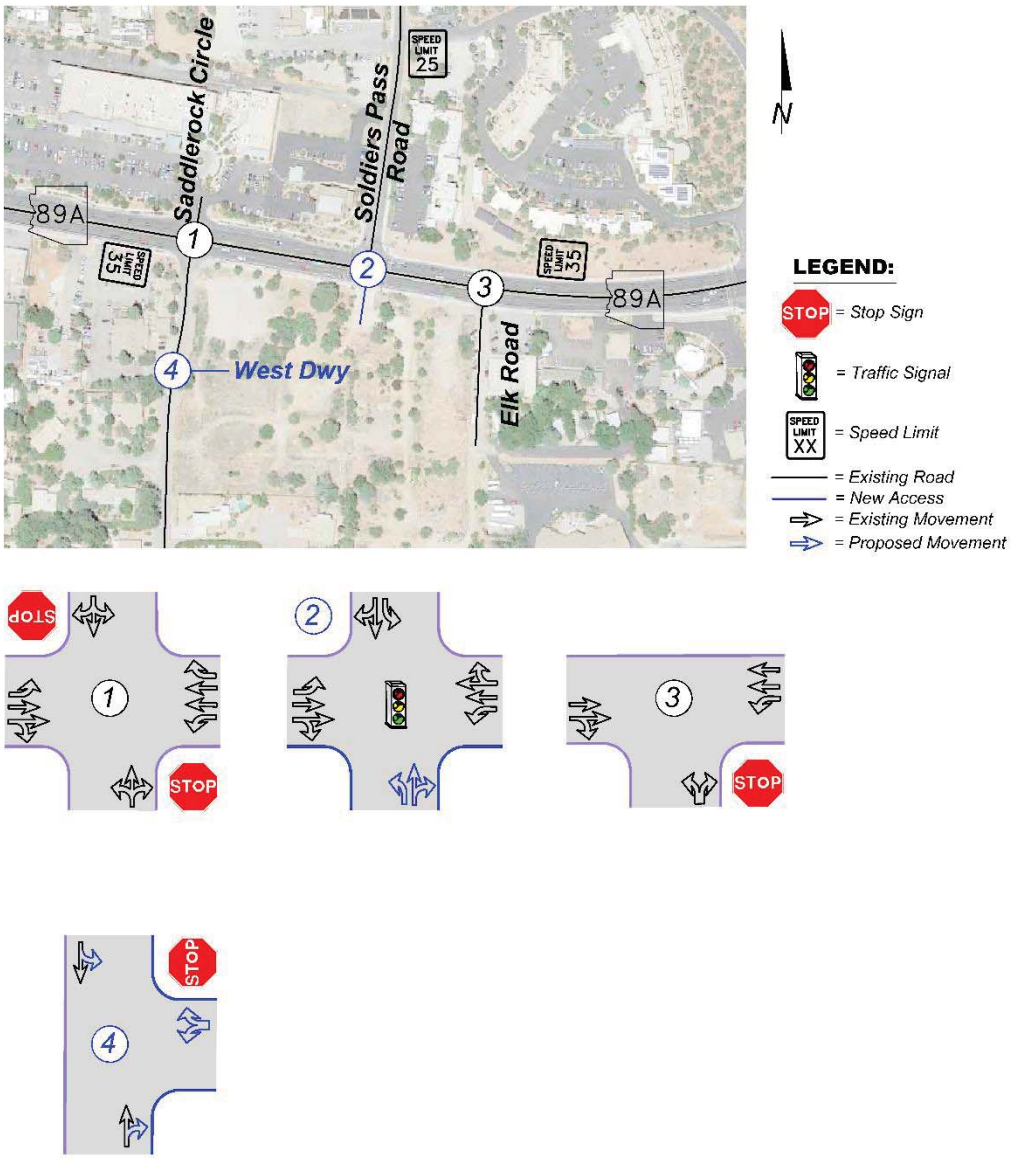


Table 2 – Project Site Generated Trips

Time Period	Multi-Family Housing	Hotel	All Suites Hotel	Rooftop Bar	High Turnover Restaurant	Total
Average Daily, Inbound (vtpd)	131	431	18	N/A	169	749
Average Daily, Outbound (vtpd)	131	431	18	N/A	169	749
Total Daily	**262**	**862**	**36**	**N/A**	**338**	**1,498**
AM Peak Hour, Inbound (vtph)	5	31	2	N/A	17	55
AM Peak Hour, Outbound (vtph)	15	21	1	N/A	13	50
Total AM Peak	**20**	**52**	**3**	**N/A**	**30**	**105**
PM Peak Hour, Inbound (vtph)	16	31	1	8	19	75
PM Peak Hour, Outbound (vtph)	10	29	2	4	11	56
Total PM Peak	**26**	**60**	**3**	**12**	**30**	**131**

vtpd - vehicle trips per day, vtph - vehicle trips per hour

Trip Distribution & Assignment

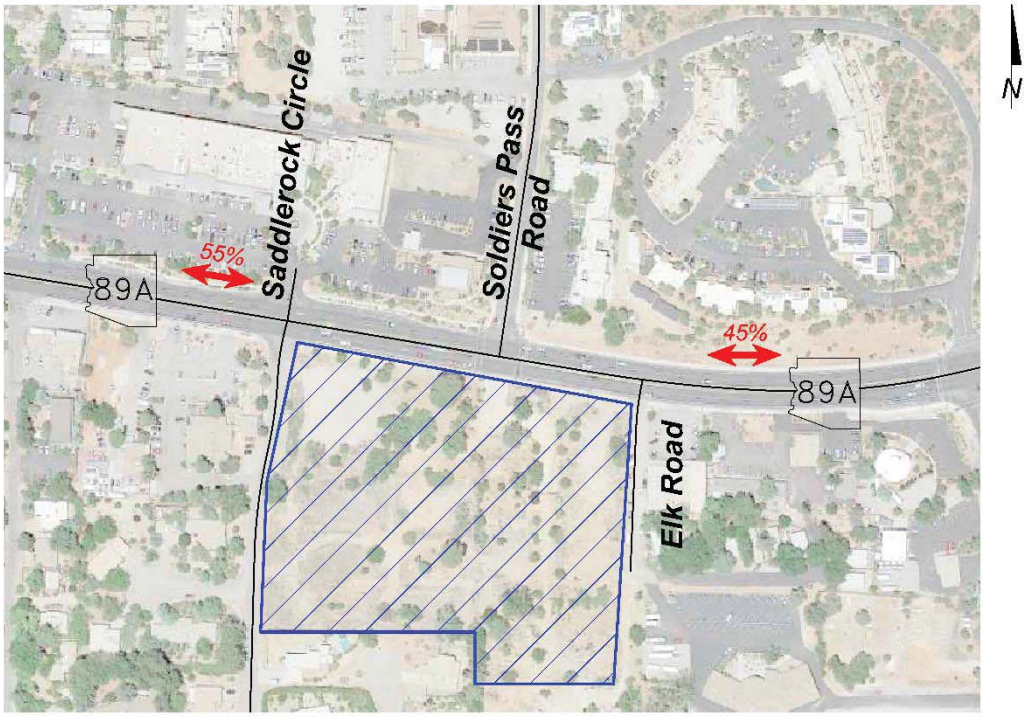
Trip distribution for the project was based on existing traffic volume patterns near the proposed site. **Figure 6** shows the weekday trip distribution for the project as a percentage of net new primary trips. **Figure 7** shows the assignment of the new site generated trips to the project intersections within the study area.

Existing Traffic Operations

Analysis of current intersection operations was conducted for the weekday AM and PM peak hours using the nationally accepted methodology set forth in the *Highway Capacity Manual,* Transportation Research Board, 2016 (HCM 6th). The computer software Synchro 10 was utilized to calculate the levels of service for individual movements and approaches.

LOS is a qualitative measure of the traffic operations at an intersection or on a roadway segment. Level of service is ranked from LOS A, which signifies little or no congestion and is the highest rank, to LOS F, which signifies congestion and jam conditions. LOS D is typically considered adequate operation at signalized and un-signalized intersections in developed areas.

Figure 6 – Weekday Peak Hour Trip Distribution



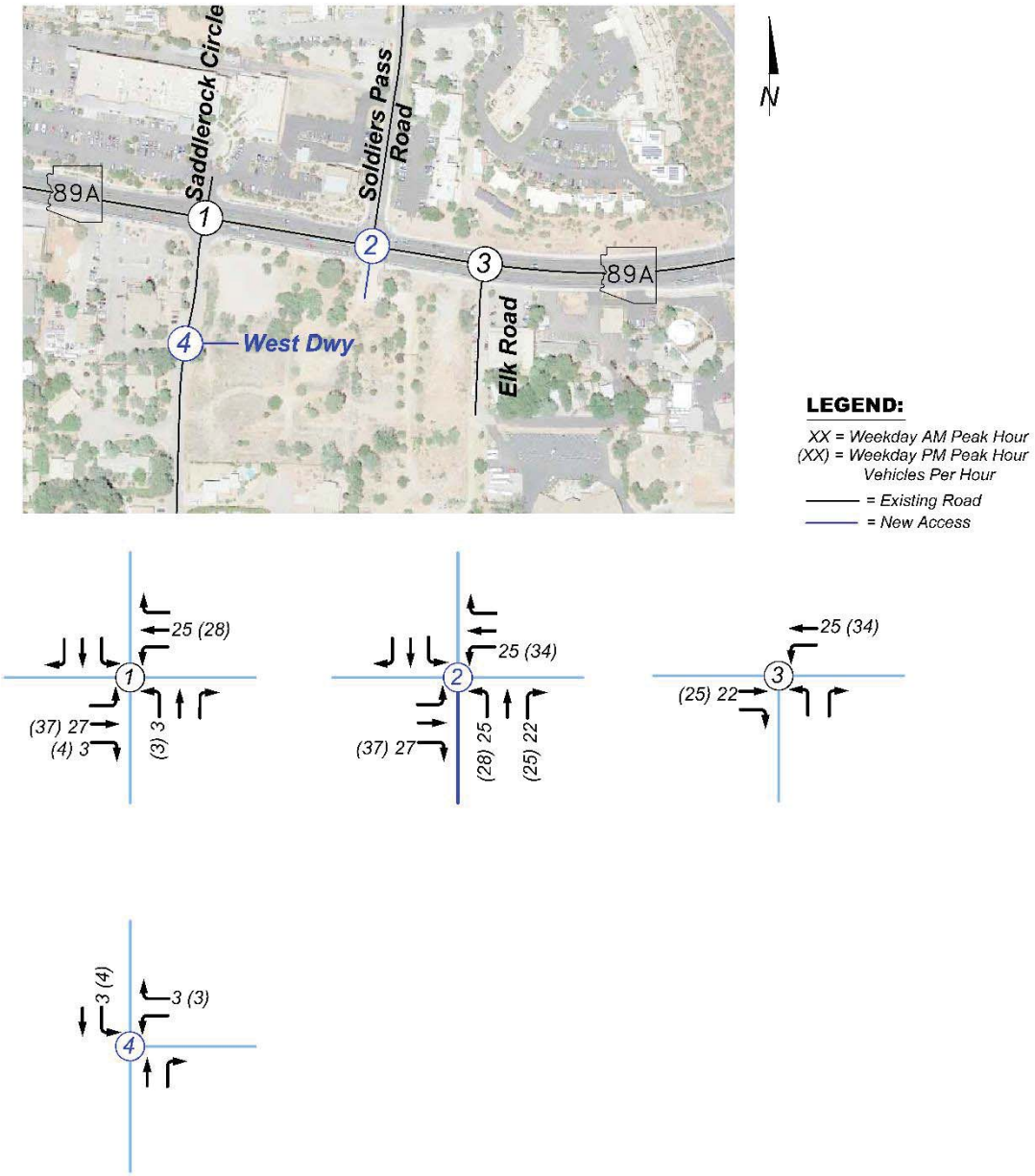
LEGEND:

EXISTING ROAD

PROJECT SITE

XX% DISTRIBUTION OF VEHICLE TRIPS

Figure 7 – Weekday Peak Hour Trip Assignment



At signalized intersections, level of service is calculated for each movement and then summed in a weighted fashion to yield the LOS for the approach and for the intersections as a whole. Criteria for level of service at signalized intersections are shown in **Table 3**.

Table 3 – Level of Service Criteria – Signalized Intersections

Level-of-Service	Average Total Delay
A	≤ 10.0 seconds/vehicle
B	> 10.0 and ≤ 20.0 seconds/vehicle
C	> 20.0 and ≤ 35.0 seconds/vehicle
D	> 35.0 and ≤ 55.0 seconds/vehicle
E	> 55.0 and ≤ 80.0 seconds/vehicle
F	> 80.0 seconds/vehicle

In calculating the levels of service, assumed signal phasing and timing data was used. Other assumptions included:

- Cycle length – 90 seconds
- Lane widths – 12 feet
- Approach grade – 0%
- Right turn on red allowed

At un-signalized intersections, level of service is predicted/calculated for those movements, which must either stop for or yield to oncoming traffic and is based on average control delay for the particular movement. Control delay is the portion of total delay attributed to traffic control measures such as stop signs and traffic signals. The criteria for level of service at un-signalized intersections are shown in **Table 4**.

Table 4 – Level of Service Criteria – Un-signalized Intersections

Level-of-Service	Delay
A	< 10 seconds/vehicle
B	> 10 and < 15 seconds/vehicle
C	> 15 and < 25 seconds/vehicle
D	> 25 and < 35 seconds/vehicle
E	> 35 and < 50 seconds/vehicle
F	> 50 seconds/vehicle

Table 5 shows the existing levels of service that were calculated for the study intersections. Complete capacity calculations are included in the Appendix.

Table 5 – Existing Weekday Peak Hour Levels of Service

Intersection	Existing			
	AM Peak		PM Peak	
	LOS	Delay	LOS	Delay
Signalized Intersections				
Soldiers Pass Road/SR 89A				
Overall Intersection	B	16.2	B	17.7
Eastbound Left	B	14.4	B	15.3
Eastbound Through	B	13.7	B	11.7
Eastbound Through/Right	A	0.0	A	0.0
Westbound Left	A	0.0	A	0.0
Westbound Through	C	20.9	C	23.0
Westbound Through/Right	C	20.8	C	22.9
Northbound Left	A	0.0	A	0.0
Northbound Through/Right	A	0.0	A	0.0
Southbound Left	B	11.1	B	18.2
Southbound Through/Right	B	11.7	B	18.4
Un-Signalized Intersections				
Saddlerock Circle/SR 89A				
Eastbound Left	A	9.6	B	12.4
Westbound Left	B	10.7	B	11.2
Northbound Left/Through/Right	E	45.2	F	>120
Southbound Left/Through/Right	D	28.4	F	>120
Elk Road/SR 89A				
Westbound Left	B	10.4	B	11.3
Northbound Left/Right	C	20.3	D	26.4

Delay - seconds per vehicle

As shown in **Table 5**, the intersection of Saddlerock Circle/SR 89A currently experiences excessive delays for the northbound and southbound turning movements. Un-signalized minor approaches to high volume state highways tend to have their turning movements operate at LOS E or F in the weekday peak hours due to the limited number of sufficient gaps for vehicles to complete a turning movement.

The remaining study intersections currently operate at adequate LOS.

Future Traffic Operations Without Project

In order to assess the impacts of the project on future traffic operations, traffic projections were made for the opening year of 2021 and the horizon year of 2024.

ADOT historical data near the site shows increasing and decreasing traffic volumes in recent years. Using a conservative 2% annual compounded growth rate, 2021 and 2024 weekday peak hour traffic volumes without the project were estimated as shown in **Figures 8** and **9**.

Figure 8 – 2021 Weekday Peak Hour Traffic Volumes Without Project

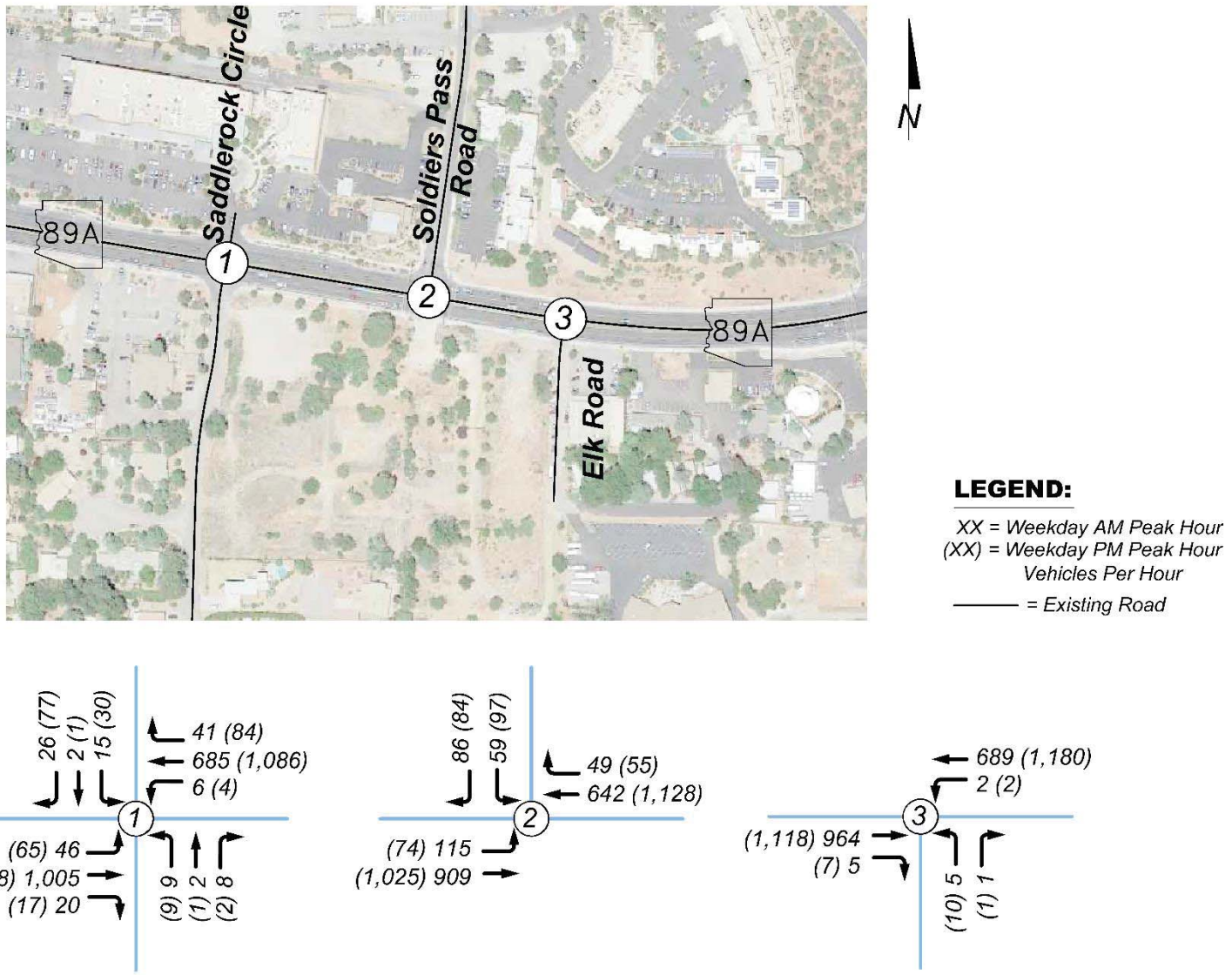
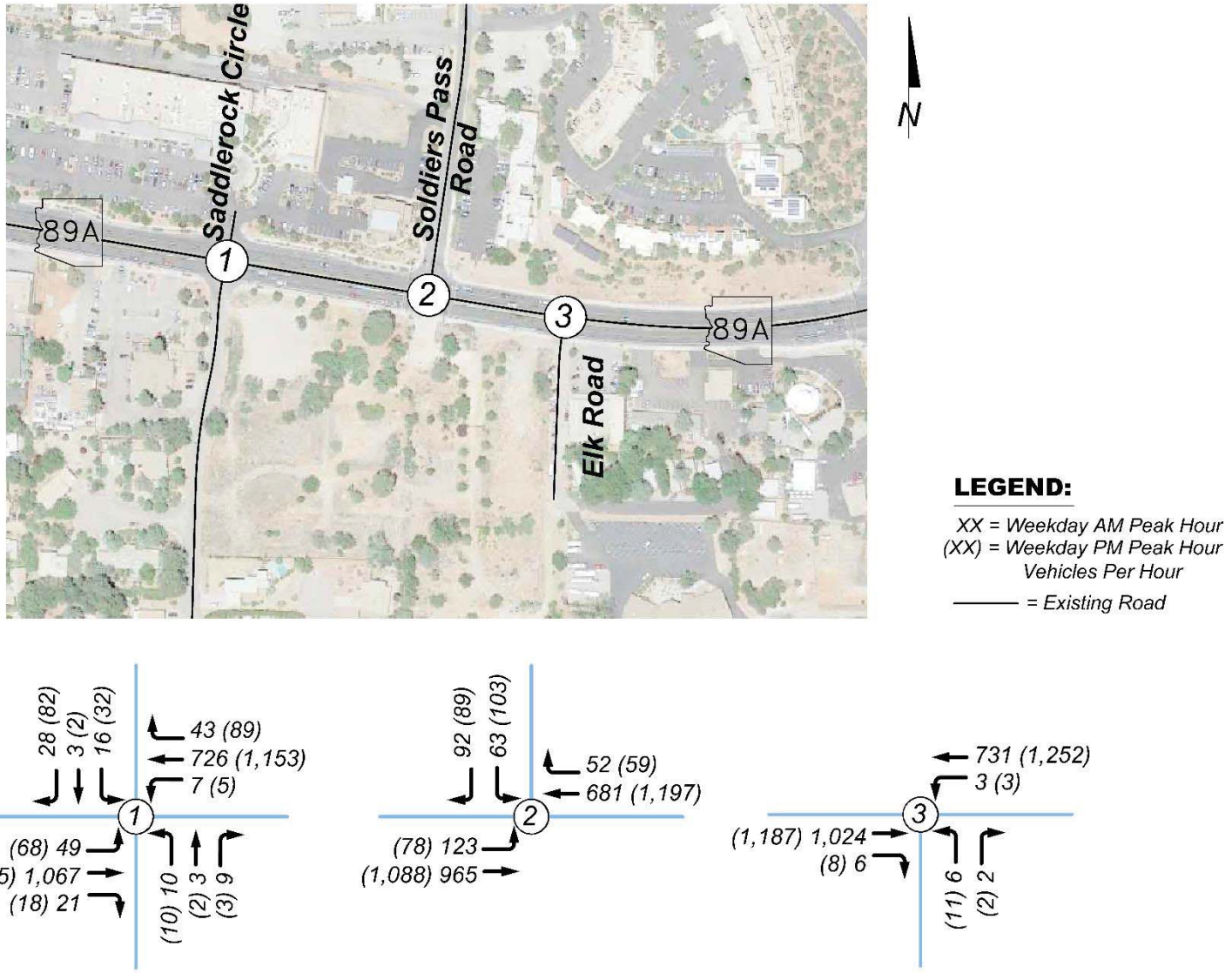


Figure 9 – 2024 Weekday Peak Hour Traffic Volumes Without Project



As with the current volumes, levels of service were calculated for each of the intersections in the study area for 2021 and 2024 without the project. Intersection levels of service for 2021 and 2024 without the project are shown in **Tables 6** and **7**. Complete capacity calculations are included in the Appendix.

Table 6 – 2021 Weekday Peak Hour Levels of Service Without Project

Intersection	2021 Without Project			
	AM Peak		PM Peak	
	LOS	Delay	LOS	Delay
Signalized Intersections				
Soldiers Pass Road/SR 89A				
Overall Intersection	B	16.3	B	18.3
Eastbound Left	B	14.5	B	16.0
Eastbound Through	B	13.7	B	11.7
Eastbound Through/Right	A	0.0	A	0.0
Westbound Left	A	0.0	A	0.0
Westbound Through	C	21.0	C	24.1
Westbound Through/Right	C	20.9	C	24.0
Northbound Left	A	0.0	A	0.0
Northbound Through/Right	A	0.0	A	0.0
Southbound Left	B	11.8	B	19.2
Southbound Through/Right	B	12.3	B	19.4
Un-Signalized Intersections				
Saddlerock Circle/SR 89A				
Eastbound Left	A	9.8	B	13.1
Westbound Left	B	11.0	B	11.5
Northbound Left/Through/Right	F	61.2	F	>120
Southbound Left/Through/Right	E	38.5	F	>120
Elk Road/SR 89A				
Westbound Left	B	10.6	B	11.5
Northbound Left/Right	C	20.0	D	27.0

Delay - seconds per vehicle

As shown in **Tables 6** and **7**, the existing delays at the intersection of Saddlerock Circle/SR 89A are expected to continue and worsen in 2021 and 2024 without traffic from the Saddle Rock Crossing site.

The remaining study intersections are anticipated to continue to operate at adequate LOS.

Table 7 – 2024 Weekday Peak Hour Levels of Service Without Project

Intersection	2024 Without Project			
	AM Peak		PM Peak	
	LOS	Delay	LOS	Delay
Signalized Intersections				
Soldiers Pass Road/SR 89A				
Overall Intersection	B	16.4	B	19.5
Eastbound Left	B	17.4	B	17.3
Eastbound Through	B	13.6	B	11.8
Eastbound Through/Right	A	0.0	A	0.0
Westbound Left	A	0.0	A	0.0
Westbound Through	C	21.1	C	26.1
Westbound Through/Right	C	21.1	C	26.1
Northbound Left	A	0.0	A	0.0
Northbound Through/Right	A	0.0	A	0.0
Southbound Left	B	12.6	C	20.3
Southbound Through/Right	B	13.3	C	20.6
Un-Signalized Intersections				
Saddlerock Circle/SR 89A				
Eastbound Left	B	10.0	B	13.9
Westbound Left	B	11.4	B	11.9
Northbound Left/Through/Right	F	88.2	F	>120
Southbound Left/Through/Right	F	53.1	F	>120
Elk Road/SR 89A				
Westbound Left	B	11.0	B	12.0
Northbound Left/Right	C	20.6	D	28.9

Delay - seconds per vehicle

Future Traffic Operations With Project

In order to assess the impacts of the project on future traffic operations, levels of service were calculated for each project intersection in 2021 and 2024, with the project. Weekday peak hour traffic volumes for 2021 and 2024 without the project were combined with the estimated trips generated by the project to yield weekday peak hour traffic volumes with the project. The weekday peak hour traffic volumes with the project in 2021 and 2024 are shown in **Figures 10** and **11**.

Weekday intersection levels of service for 2021 and 2024, with the project, were then calculated as shown in **Tables 8** and **9**. Complete capacity calculations are included in the Appendix.

Figure 10 – 2021 Weekday Peak Hour Traffic Volumes With Project

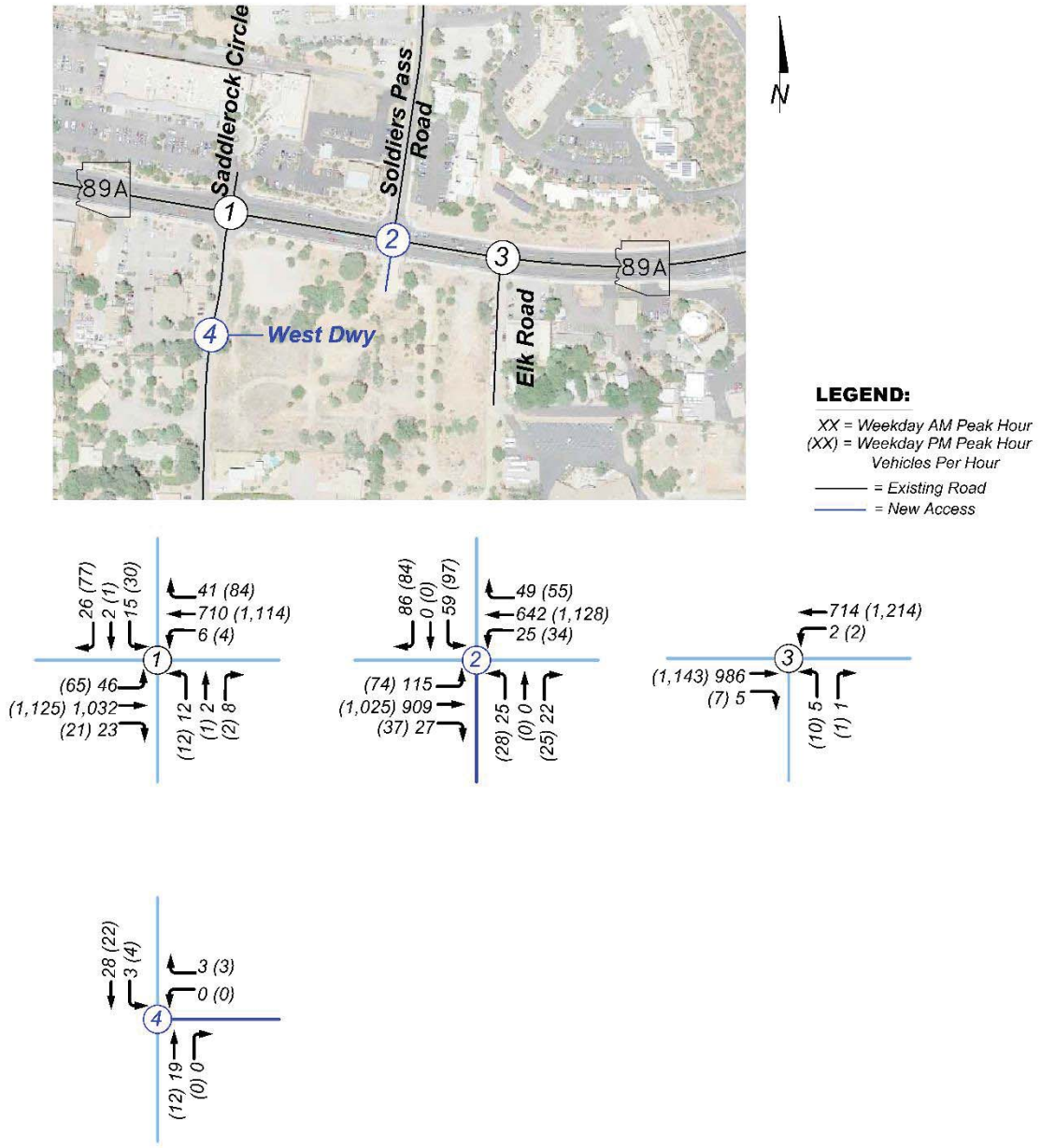


Figure 11 – 2024 Weekday Peak Hour Traffic Volumes With Project

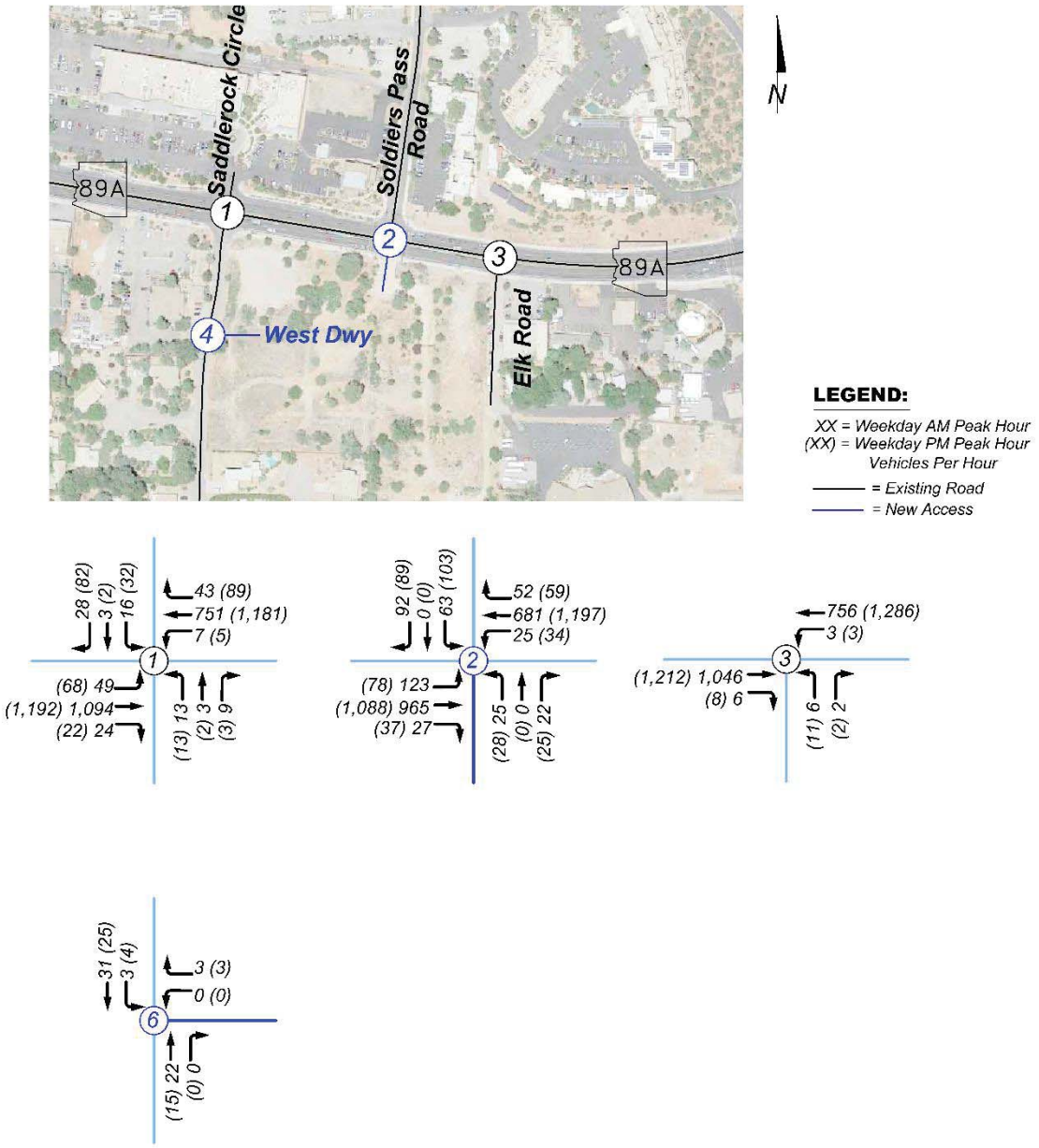


Table 8 – 2021 Weekday Peak Hour Levels of Service With Project

Intersection	2021 Without Project				2021 With Project			
	AM Peak		PM Peak		AM Peak		PM Peak	
	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
Signalized Intersections								
Soldiers Pass Road/SR 89A								
Overall Intersection	B	16.3	B	18.3	B	18.4	C	21.2
Eastbound Left	B	14.5	B	16.0	B	14.2	B	16.2
Eastbound Through	B	13.7	B	11.7	B	19.4	B	19.0
Eastbound Through/Right	A	0.0	A	0.0	B	19.3	B	19.0
Westbound Left	A	0.0	A	0.0	B	15.0	B	13.6
Westbound Through	C	21.0	C	24.1	B	19.3	C	24.1
Westbound Through/Right	C	20.9	C	24.0	B	19.3	C	24.0
Northbound Left	A	0.0	A	0.0	B	15.2	C	20.7
Northbound Through/Right	A	0.0	A	0.0	B	13.2	B	18.0
Southbound Left	B	11.8	B	19.2	B	14.5	C	20.7
Southbound Through/Right	B	12.3	B	19.4	B	14.3	B	19.4
Un-Signalized Intersections								
Saddlerock Circle/SR 89A								
Eastbound Left	A	9.8	B	13.1	A	9.9	B	13.4
Westbound Left	B	11.0	B	11.5	B	11.2	B	11.7
Northbound Left/Through/Right	F	61.2	F	>120	F	78.5	F	>120
Southbound Left/Through/Right	E	38.5	F	>120	E	41.8	F	>120
Elk Road/SR 89A								
Westbound Left	B	10.6	B	11.5	B	10.7	B	11.7
Northbound Left/Right	C	20.0	D	27.0	C	20.4	D	28.0
West Driveway/Saddlerock Circle								
Westbound Left/Right	N/A				A	8.4	A	8.4
Southbound Left/Through					A	7.3	A	7.3

Delay - seconds per vehicle

As shown in **Tables 8** and **9**, the intersection of Saddlerock Circle/SR 89A is expected to continue to operate at an inadequate LOS with the addition of traffic volumes associated with the proposed project.

All remaining study intersections are expected to operate at an adequate LOS.

Table 9 – 2024 Weekday Peak Hour Levels of Service With Project

Intersection	2024 Without Project				2024 With Project			
	AM Peak		PM Peak		AM Peak		PM Peak	
	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
Signalized Intersections								
Soldiers Pass Road/SR 89A								
Overall Intersection	B	16.4	B	19.5	B	18.7	C	22.6
Eastbound Left	B	17.4	B	17.3	B	14.2	B	17.3
Eastbound Through	B	13.6	B	11.8	B	19.6	B	19.8
Eastbound Through/Right	A	0.0	A	0.0	B	19.5	B	19.7
Westbound Left	A	0.0	A	0.0	B	15.0	B	13.8
Westbound Through	C	21.1	C	26.1	B	19.4	C	26.1
Westbound Through/Right	C	21.1	C	26.1	B	19.4	C	26.1
Northbound Left	A	0.0	A	0.0	B	16.3	C	22.0
Northbound Through/Right	A	0.0	A	0.0	B	14.0	B	19.0
Southbound Left	B	12.6	C	20.3	B	15.4	C	22.0
Southbound Through/Right	B	13.3	C	20.6	B	15.3	C	20.6
Un-Signalized Intersections								
Saddlerock Circle/SR 89A								
Eastbound Left	B	10.0	B	13.9	B	10.2	B	14.2
Westbound Left	B	11.4	B	11.9	B	11.6	B	12.2
Northbound Left/Through/Right	F	88.2	F	>120	F	117.5	F	>120
Southbound Left/Through/Right	F	53.1	F	>120	F	60.1	F	>120
Elk Road/SR 89A								
Westbound Left	B	11.0	B	12.0	B	11.1	B	12.2
Northbound Left/Right	C	20.6	D	28.9	C	21.1	D	29.7
West Driveway/Saddlerock Circle								
Westbound Left/Right	N/A				A	8.5	A	8.4
Southbound Left/Through					A	7.3	A	7.3

Delay - seconds per vehicle

Turn Lane Analysis

A key element of this traffic analysis is to determine if right and left turn lanes are required at the driveways providing direct access to the project. The need for turn lanes were based on the ADOT's *Traffic Guidelines and Processes 245 – Turn Lane Warrants* (TGP 245) at the intersection of Soldiers Pass Road/SR 89A. City of Sedona guidelines were reviewed to determine the need for auxiliary turn lanes for the proposed access points on Saddlerock Circle and Elk Road.

When needed, turn lanes remove the slowing turning traffic from the through traffic stream, improving capacity and reducing rear-end accidents. **Table 10** shows the locations that were evaluated for left and right turn lanes based on traffic volumes in 2024 with the project.

Table 10 – Turn Lane Warrants

Intersection	Direction	Turn Treatment Analyzed	Guidelines Applied	Turn Treatments Warranted?
Soldiers Pass Road/SR 89A	Eastbound	Right Turn Lane	ADOT	No
West Driveway/Saddlerock Circle	Southbound	Left Turn Lane	Sedona	No

As shown in **Table 10,** no additional auxiliary turn lanes are warranted at the access points serving the Saddle Rock Crossing site.

Crash Analysis

Crash history for the three study intersections was obtained from ADOT between 1 January 2015 to 31 December 2019. The results of the crash data review are shown in **Tables 11** and **12**.

Table 11 – Crash Analysis at Soldiers Pass Road/SR 89A

Year	Crash Type							Fatal	Injury	Crash Totals
	Angle	Left Turn	Rear-End	Sideswipe	Single Vehicle	Head On	Other			
2015			2						1	2
2016			2		1				1	3
2017	1	2	2	1			1		1	7
2018			1		1					2
2019			1						1	1
5-Year Total	**1**	**2**	**8**	**1**	**2**	**0**	**1**	**0**	**4**	**15**

Table 11 shows that fifteen (15) crashes have occurred at the intersection of Soldiers Pass Road/SR 89A in the five-year study analyzed. Of these crashes, eight (8) were rear-end type collisions. These types of crashes are often due to driver inattention, failure to slow or stop, and are common at signalized intersections.

Table 12 – Crash Analysis at Saddlerock Circle/SR 89A

Year	Crash Type							Fatal	Injury	Crash Totals
	Angle	Left Turn	Rear-End	Sideswipe	Single Vehicle	Head On	Other			
2015		1								1
2016			1							1
2017	1									1
2018										0
2019										0
5-Year Total	**1**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**3**

As shown in **Table 12**, there were three (3) reported collisions with no injuries at the intersection of Saddlerock Circle/SR 89A within the five-year study period.

No crashes were recorded at the intersection Elk Road/SR 89A within the study period analyzed.

It is possible that other crashes occurred in the area where the Police Department was not contacted and no official record of these crashes exists.

Mitigation

The intersection of Saddlerock Circle/SR 89A currently experiences excessive delays for the northbound and southbound turning movements. Un-signalized minor approaches to high volume state highways tend to have their turning movements operate at LOS E or F in the weekday peak hours due to the limited number of sufficient gaps for vehicles to complete a turning movement. The installation of traffic signal would be expected to alleviate these delays. **Table 13** shows the improvement in LOS with the installation of a traffic signal.

Table 13 – Mitigation Measures

Intersection	Mitigation Measure	2024 Study Year											
		Without Project				With Project				With Project Mitigation			
		AM Peak		PM Peak		AM Peak		PM Peak		AM Peak		PM Peak	
		LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
Un-Signalized Intersections													
Saddlerock Circle/SR 89A	Install Traffic Signal												
Overall Intersection		N/A		N/A		N/A		N/A		A	7.4	A	8.6
Eastbound Left		B	10.0	B	13.9	B	10.2	B	14.2	A	4.9	A	6.8
Eastbound Through		N/A		N/A		N/A		N/A		A	7.2	A	7.0
Eastbound Through/Right										A	7.2	A	7.0
Westbound Left		B	11.4	B	11.9	B	11.6	B	12.2	A	5.8	A	6.1
Westbound Through		N/A		N/A		N/A		N/A		A	7.1	A	9.0
Westbound Right										A	5.5	A	5.9
Northbound Left/Through/Right		F	88.2	F	>120	F	117.5	F	>120	B	16.7	C	20.5
Southbound Left/Through/Right		F	53.1	F	>120	F	60.1	F	>120	B	17.2	C	23.2

Delay - seconds per vehicle

Due to the proximity of the intersection of Saddlerock Circle/SR 89A to the existing signalized intersection of Soldiers Pass Road/SR 89A, the installation of an additional traffic signal is not recommended. Traffic signals, when spaced too closely, often have a negative impact on traffic flow and can be difficult to coordinate. If excessive delays occur, drivers may, and will be able to, re-route themselves to the signalized intersection at Soldiers Pass Road/SR 89A to complete their left turning movements.

Conclusion

When fully completed, the proposed Saddle Rock Crossing project is predicted to generate an additional 1,498 vehicle trips per day (vtpd) on weekdays to the adjacent street system from the new project site. Fifty percent of these new trips (749 vehicle trips) will be into the project and fifty percent will be out of the project.

The intersection of Saddlerock Circle/SR 89A currently experiences excessive delays for the northbound and southbound turning movements. Un-signalized minor approaches to high volume state highways tend to have their turning movements operate at LOS E or F in the weekday peak hours due to the limited number of sufficient gaps for vehicles to complete a turning movement.

The remaining study intersections currently operate at adequate LOS.

Motorists on Saddlerock Circle travel at an average speed of 23 to 24 mph with a northbound-southbound average of 69.3% of vehicles traveling under 25 mph.

The existing delays at the intersection of Saddlerock Circle/SR 89A are expected to continue and worsen in 2021 and 2024 without traffic from the Saddle Rock Crossing site.

The remaining study intersections are anticipated to continue to operate at adequate LOS.

The intersection of Saddlerock Circle/SR 89A is expected to continue to operate at an inadequate LOS with the addition of traffic volumes associated with the proposed project.

All remaining study intersections are expected to operate at an adequate LOS.

No additional auxiliary turn lanes are warranted at the access points serving the Saddle Rock Crossing site.

Based on crash data retrieved from the ADOT database, 15 crashes have occurred at the intersection of Soldiers Pass Road/SR 89A in the five-year study analyzed. Of these crashes, eight were rear-end type collisions. These types of crashes are often due to driver inattention, failure to slow or stop, and are common at signalized intersections.

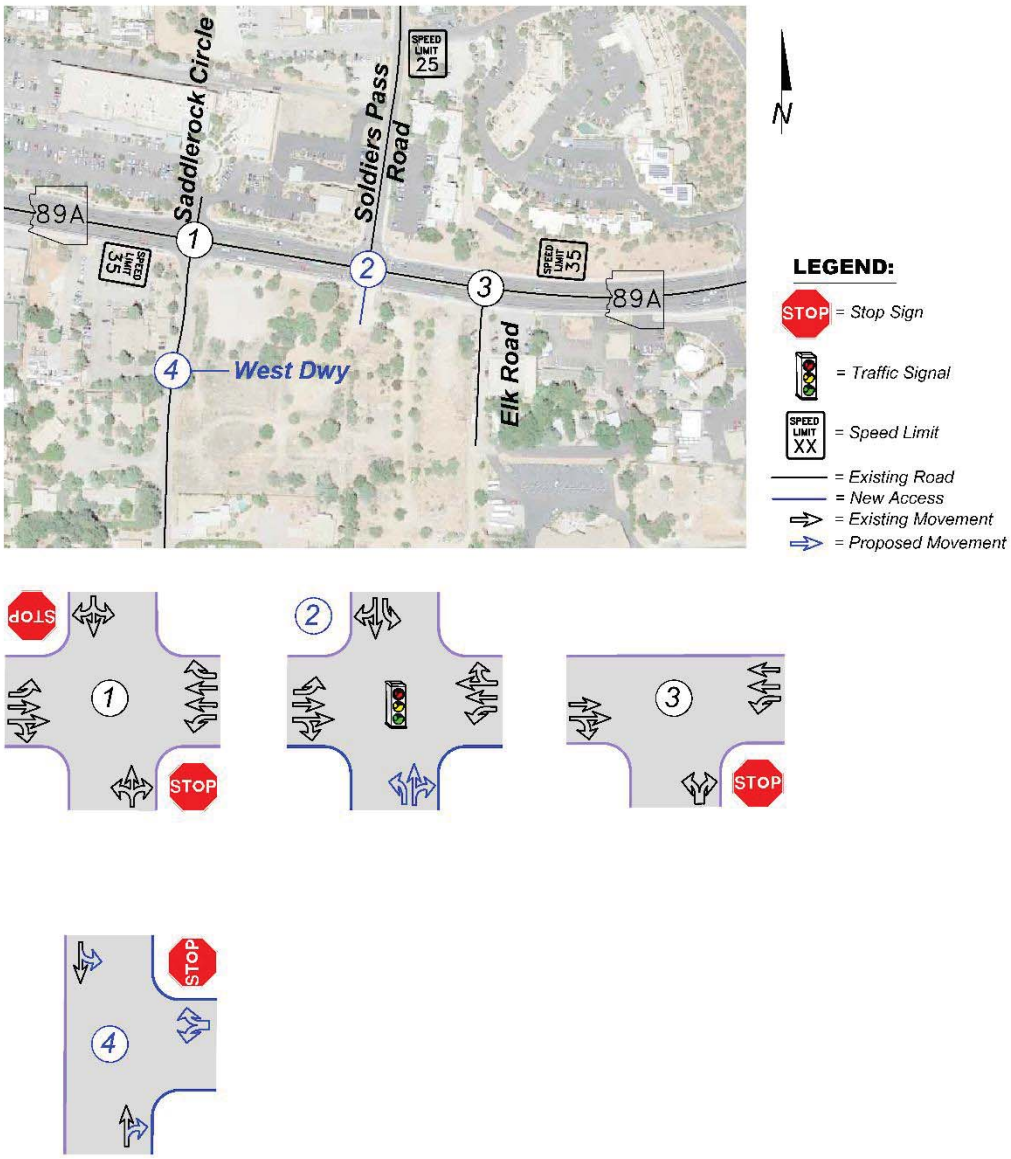
With limited crashes at the remaining study intersections, no specific crash trends can be identified.

The intersection of Saddlerock Circle/SR 89A currently experiences excessive delays for the northbound and southbound turning movements. Un-signalized minor approaches to high volume state highways tend to have their turning movements operate at LOS E or F in the weekday peak hours due to the limited number of sufficient gaps for vehicles to complete a turning movement. The installation of traffic signal would be expected to alleviate these delays.

However, due to the proximity of the intersection of Saddlerock Circle/SR 89A to the existing signalized intersection of Soldiers Pass Road/SR 89A, the installation of an additional traffic signal is not recommended. Traffic signals, when spaced too closely, often have a negative impact on traffic flow and can be difficult to coordinate. If excessive delays occur, drivers may, and will be able to, re-route themselves to the signalized intersection at Soldiers Pass Road/SR 89A to complete their left turning movements.

Proposed lane configurations and traffic control are shown in **Figure 12**.

Figure 12 – Proposed Lane Configurations and Traffic Control



SADDLE ROCK CROSSING
SOLDIERS PASS ROAD/STATE ROUTE 89A
TRAFFIC IMPACT ANALYSIS

APPENDIX

Traffic Counts

Trip Generation Calculations

Capacity Calculations

Approved ADOT TIA Presubmittal Form

SADDLE ROCK CROSSING
SOLDIERS PASS ROAD/STATE ROUTE 89A
TRAFFIC IMPACT ANALYSIS

APPENDIX

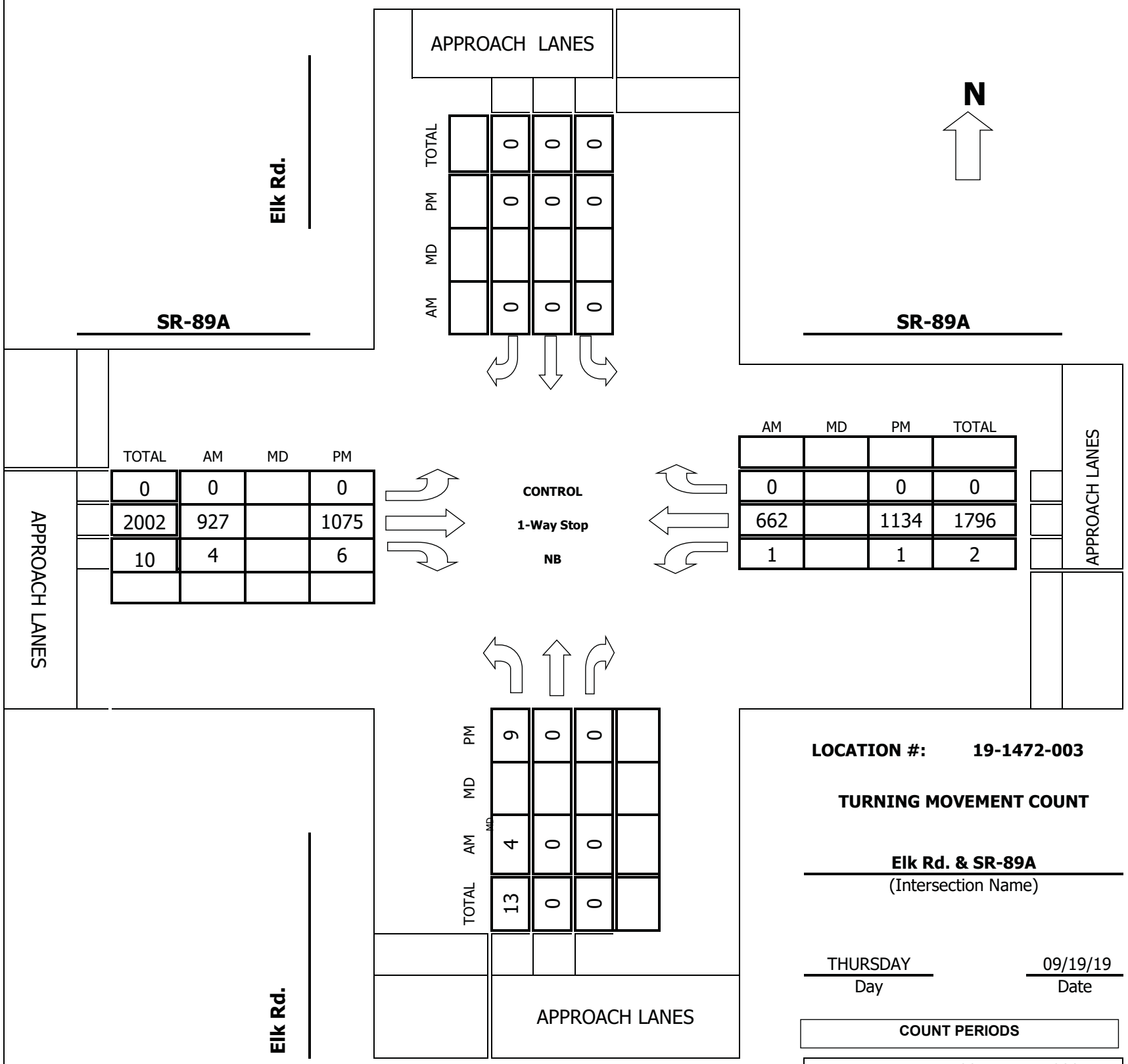
Traffic Counts

Intersection Turning Movement
Prepared by:

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

Project #: 19-1472-003

TMC SUMMARY OF Elk Rd. & SR-89A



LOCATION #: 19-1472-003

TURNING MOVEMENT COUNT

Elk Rd. & SR-89A
(Intersection Name)

THURSDAY (Day) 09/19/19 (Date)

COUNT PERIODS			
AM	700AM	-	900AM
NOON		-	
PM	400PM	-	600PM

AM PEAK HOUR 800 AM

NOON PEAK HOUR

PM PEAK HOUR 400 PM

Intersection Turning Movement
Prepared by:

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

veracitytrafficgroup

N-S STREET:	Elk Rd.	DATE:	09/19/19	LOCATION:	Sedona
E-W STREET:	SR-89A	DAY:	THURSDAY	PROJECT#	19-1472-003

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	0	0	0	2	0	0	2	0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	0	0	0	0	0	0	0	116	0	0	93	0	209
7:15 AM	2	0	1	0	0	0	0	141	1	0	149	0	294
7:30 AM	3	0	0	0	0	0	0	163	1	0	198	0	365
7:45 AM	1	0	0	0	0	0	0	198	0	1	210	0	410
8:00 AM	2	0	0	0	0	0	0	220	0	0	157	0	379
8:15 AM	1	0	0	0	0	0	0	236	2	0	152	0	391
8:30 AM	1	0	0	0	0	0	0	237	2	0	164	0	404
8:45 AM	0	0	0	0	0	0	0	234	0	1	189	0	424
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													

TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
Volumes	10	0	1	0	0	0	0	1545	6	2	1312	0	2876
Approach %	90.91	0.00	9.09	####	####	####	0.00	99.61	0.39	0.15	99.85	0.00	
App/Depart	11	/	0	0	/	8	1551	/	1546	1314	/	1322	

AM Peak Hr Begins at: 800 AM

PEAK													
Volumes	4	0	0	0	0	0	0	927	4	1	662	0	1598
Approach %	100.00	0.00	0.00	####	####	####	0.00	99.57	0.43	0.15	99.85	0.00	

PEAK HR. FACTOR:	0.500	0.000	0.974	0.872	0.942

CONTROL: 1-Way Stop (NB)
COMMENT 1:
GPS: 34.862524, -111.782431

Intersection Turning Movement

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

veracitytrafficgroup

N-S STREET:	Elk Rd. 0	DATE:	09/19/19	LOCATION:	Sedona
E-W STREET:	SR-89A	DAY:	THURSDAY	PROJECT#	19-1472-003

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	0	0	0	2	0	0	2	0	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM	1	0	0	0	0	0	0	261	1	0	278	0	541
4:15 PM	2	0	0	0	0	0	0	269	2	1	263	0	537
4:30 PM	3	0	0	0	0	0	0	273	3	0	308	0	587
4:45 PM	3	0	0	0	0	0	0	272	0	0	285	0	560
5:00 PM	0	0	1	0	0	0	0	281	2	0	239	0	523
5:15 PM	0	0	1	0	0	0	0	246	0	0	241	0	488
5:30 PM	1	0	0	0	0	0	0	235	0	0	217	0	453
5:45 PM	0	0	0	0	0	0	0	207	0	0	230	0	437
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													

TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
Volumes	10	0	2	0	0	0	0	2044	8	1	2061	0	4126
Approach %	83.33	0.00	16.67	####	####	####	0.00	99.61	0.39	0.05	99.95	0.00	
App/Depart	12	/	0	0	/	9	2052	/	2046	2062	/	2071	

PM Peak Hr Begins at: 400 PM

PEAK													
Volumes	9	0	0	0	0	0	0	1075	6	1	1134	0	2225
Approach %	100.00	0.00	0.00	####	####	####	0.00	99.44	0.56	0.09	99.91	0.00	

PEAK HR. FACTOR:	0.750	0.000	0.979	0.921	0.948

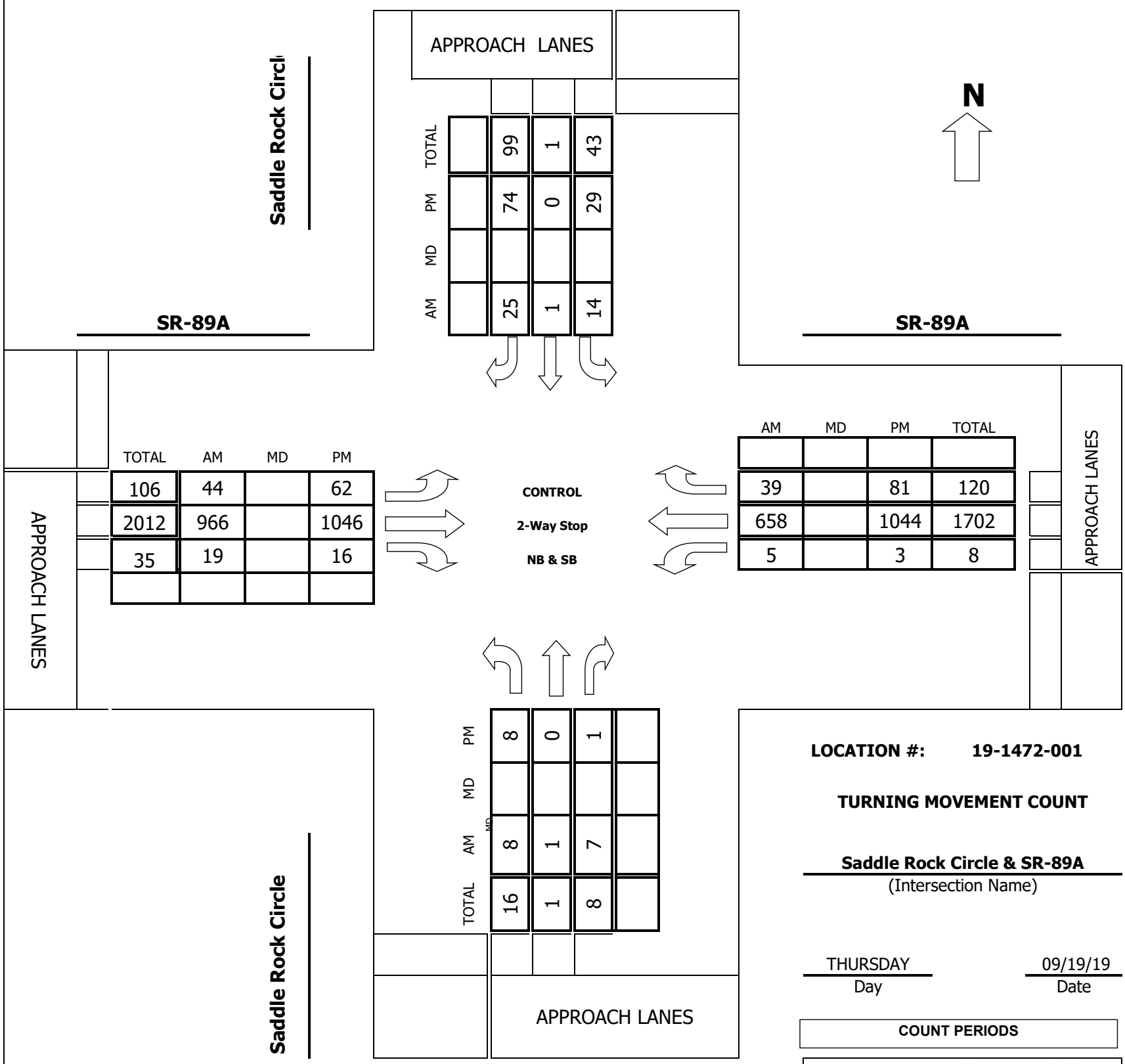
CONTROL: 1-Way Stop (NB)
COMMENT 1: 0
GPS: 34.862524, -111.782431

Intersection Turning Movement
Prepared by:

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

Project #: 19-1472-001

TMC SUMMARY OF Saddle Rock Circle & SR-89A



LOCATION #: 19-1472-001

TURNING MOVEMENT COUNT

Saddle Rock Circle & SR-89A
(Intersection Name)

THURSDAY (Day) 09/19/19 (Date)

COUNT PERIODS			
AM	700AM	-	900AM
NOON		-	
PM	400PM	-	600PM

AM PEAK HOUR 800 AM

NOON PEAK HOUR

PM PEAK HOUR 415 PM

Intersection Turning Movement
Prepared by:

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

veracitytrafficgroup

N-S STREET:	Saddle Rock Circle	DATE:	09/19/19	LOCATION:	Sedona
E-W STREET:	SR-89A	DAY:	THURSDAY	PROJECT#	19-1472-001

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	2	0	0	2	1	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	1	0	0	1	0	2	6	117	0	0	91	1	219
7:15 AM	1	0	0	3	0	5	10	153	1	0	138	6	317
7:30 AM	1	0	1	6	0	4	6	176	2	0	159	4	359
7:45 AM	6	0	2	1	0	12	7	192	4	1	196	8	429
8:00 AM	0	0	1	4	0	8	12	230	5	1	150	14	425
8:15 AM	3	0	0	5	0	3	7	238	4	1	157	8	426
8:30 AM	2	1	4	2	1	5	13	248	7	2	161	9	455
8:45 AM	3	0	2	3	0	9	12	250	3	1	190	8	481
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													

TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
Volumes	17	1	10	25	1	48	73	1604	26	6	1242	58	3111
Approach %	60.71	3.57	35.71	33.78	1.35	64.86	4.29	94.19	1.53	0.46	95.10	4.44	
App/Depart	28	/	132	74	/	33	1703	/	1639	1306	/	1307	

AM Peak Hr Begins at: 800 AM

PEAK													
Volumes	8	1	7	14	1	25	44	966	19	5	658	39	1787
Approach %	50.00	6.25	43.75	35.00	2.50	62.50	4.28	93.88	1.85	0.71	93.73	5.56	
PEAK HR. FACTOR:		0.571			0.833			0.960			0.882		0.929

CONTROL:	2-Way Stop (NB & SB)
COMMENT 1:	
GPS:	34.862792, -111.784480

Intersection Turning Movement

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

veracitytrafficgroup

N-S STREET:	Saddle Rock Circle 0	DATE:	09/19/19	LOCATION:	Sedona
E-W STREET:	SR-89A	DAY:	THURSDAY	PROJECT#	19-1472-001

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	2	0	0	2	1	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM	5	0	4	6	0	12	15	243	4	2	260	20	571
4:15 PM	3	0	0	3	0	13	9	260	7	0	242	20	557
4:30 PM	2	0	1	10	0	21	18	260	2	0	295	24	633
4:45 PM	2	0	0	7	0	17	19	256	4	2	273	23	603
5:00 PM	1	0	0	9	0	23	16	270	3	1	234	14	571
5:15 PM	0	0	2	4	0	16	15	245	2	1	228	24	537
5:30 PM	0	0	1	6	0	17	19	227	4	1	205	16	496
5:45 PM	1	0	1	6	0	12	11	179	4	3	231	8	456
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													

TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
Volumes	14	0	9	51	0	131	122	1940	30	10	1968	149	4424
Approach %	60.87	0.00	39.13	28.02	0.00	71.98	5.83	92.73	1.43	0.47	92.52	7.01	
App/Depart	23	/	271	182	/	40	2092	/	2000	2127	/	2113	

PM Peak Hr Begins at: 415 PM

PEAK													
Volumes	8	0	1	29	0	74	62	1046	16	3	1044	81	2364
Approach %	88.89	0.00	11.11	28.16	0.00	71.84	5.52	93.06	1.42	0.27	92.55	7.18	
PEAK HR. FACTOR:	0.750			0.805			0.972			0.884			0.934

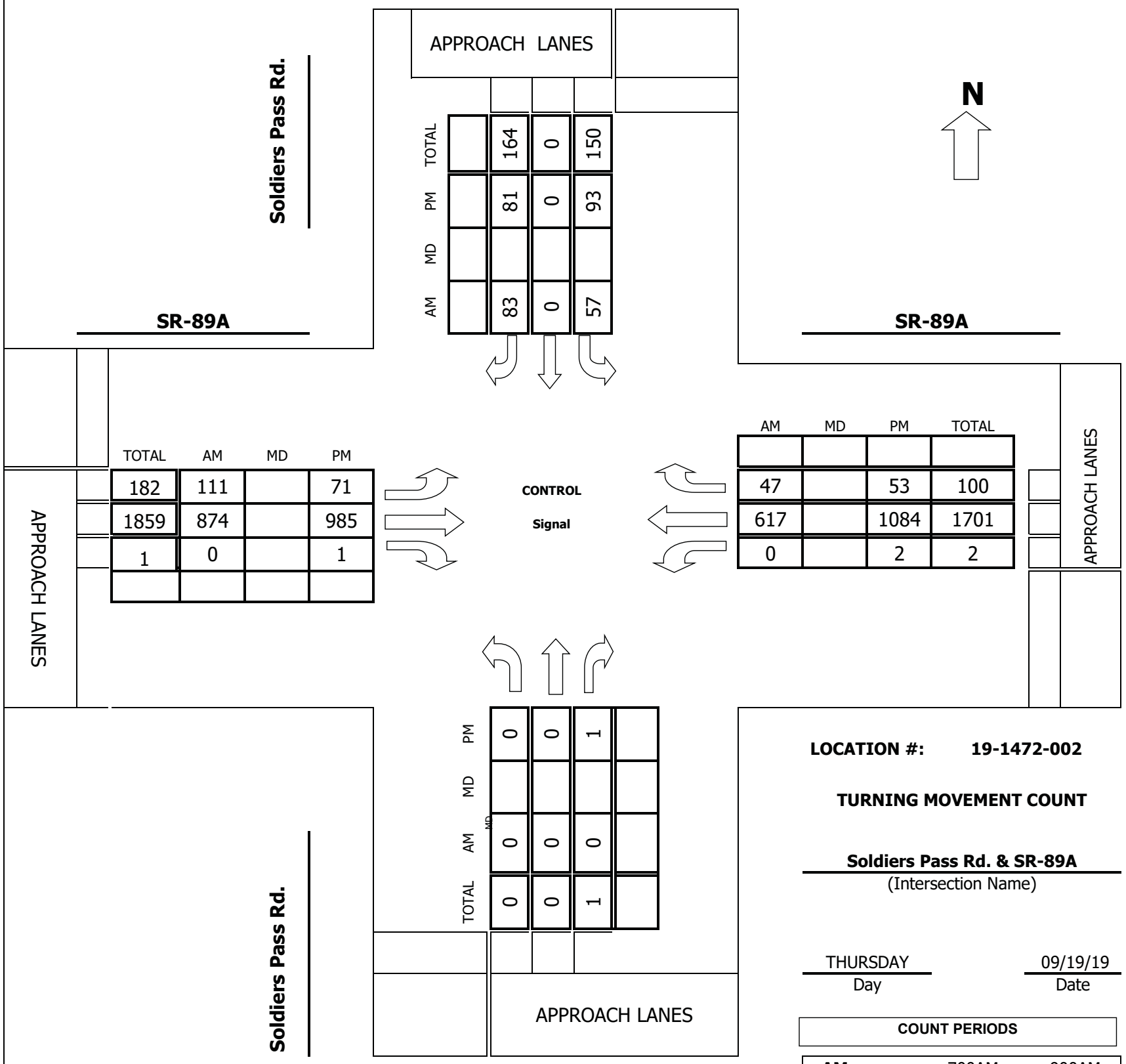
CONTROL:	2-Way Stop (NB & SB)
COMMENT 1:	0
GPS:	34.862792, -111.784480

Intersection Turning Movement
Prepared by:

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

Project #: 19-1472-002

TMC SUMMARY OF Soldiers Pass Rd. & SR-89A



LOCATION #: 19-1472-002

TURNING MOVEMENT COUNT

Soldiers Pass Rd. & SR-89A
(Intersection Name)

THURSDAY (Day) 09/19/19 (Date)

COUNT PERIODS

AM	700AM	-	900AM
NOON		-	
PM	400PM	-	600PM

AM PEAK HOUR 800 AM

NOON PEAK HOUR

PM PEAK HOUR 400 PM

Intersection Turning Movement
Prepared by:

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

veracitytrafficgroup

N-S STREET:	Soldiers Pass Rd.	DATE:	09/19/19	LOCATION:	Sedona
E-W STREET:	SR-89A	DAY:	THURSDAY	PROJECT#	19-1472-002

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	1	1	0	1	2	0	1	2	0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	0	0	0	7	0	13	15	106	0	0	81	13	235
7:15 AM	0	0	0	9	0	12	21	134	0	0	129	24	329
7:30 AM	0	0	0	21	0	15	44	141	0	0	148	54	423
7:45 AM	0	0	0	23	0	16	21	173	0	0	191	19	443
8:00 AM	0	0	0	12	0	18	27	207	0	0	146	12	422
8:15 AM	0	0	0	20	0	20	26	216	0	0	145	7	434
8:30 AM	0	0	0	11	0	22	26	227	0	0	149	15	450
8:45 AM	0	0	0	14	0	23	32	224	0	0	177	13	483
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													

TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
Volumes	0	0	0	117	0	139	212	1428	0	0	1166	157	3219
Approach %	####	####	####	45.70	0.00	54.30	12.93	87.07	0.00	0.00	88.13	11.87	
App/Depart	0	/	369	256	/	0	1640	/	1545	1323	/	1305	

AM Peak Hr Begins at: 800 AM

PEAK													
Volumes	0	0	0	57	0	83	111	874	0	0	617	47	1789
Approach %	####	####	####	40.71	0.00	59.29	11.27	88.73	0.00	0.00	92.92	7.08	
PEAK HR. FACTOR:		0.000			0.875			0.962			0.874		0.926

CONTROL: Signal
COMMENT 1:
GPS: 34.862633, -111.783251

Intersection Turning Movement

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

veracitytrafficgroup

N-S STREET:	Soldiers Pass Rd. 0	DATE:	09/19/19	LOCATION:	Sedona
E-W STREET:	SR-89A	DAY:	THURSDAY	PROJECT#	19-1472-002

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	1	1	0	1	2	0	1	2	0	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM	0	0	0	20	0	18	16	239	1	0	265	13	572
4:15 PM	0	0	0	27	0	22	21	243	0	1	243	20	577
4:30 PM	0	0	1	25	0	19	22	251	0	1	299	10	628
4:45 PM	0	0	0	21	0	22	12	252	0	0	277	10	594
5:00 PM	0	0	0	17	0	23	16	265	0	0	228	10	559
5:15 PM	0	0	0	13	0	20	17	233	0	0	235	4	522
5:30 PM	0	0	0	12	0	17	12	222	1	0	207	10	481
5:45 PM	0	0	2	29	0	24	14	173	1	1	220	7	471
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													

TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
Volumes	0	0	3	164	0	165	130	1878	3	3	1974	84	4404
Approach %	0.00	0.00	100.00	49.85	0.00	50.15	6.46	93.39	0.15	0.15	95.78	4.08	
App/Depart	3	/	214	329	/	6	2011	/	2045	2061	/	2139	

PM Peak Hr Begins at: 400 PM

PEAK													
Volumes	0	0	1	93	0	81	71	985	1	2	1084	53	2371
Approach %	0.00	0.00	100.00	53.45	0.00	46.55	6.72	93.19	0.09	0.18	95.17	4.65	

PEAK HR. FACTOR:	0.250	0.888	0.968	0.919	0.944

CONTROL:	Signal
COMMENT 1:	0
GPS:	34.862633, -111.783251

Field Data Services of Arizona

31894 Whitetail Ln.
Temecula, CA 92592
520.316.6745

Site Code: Thurs 09/19/19
Station ID: 19-1472-004
Saddle Rock Cir. north of June Bug Cir.
34.862087, -111.784590
Latitude: 0' 0.0000 Undefined

Northbound

Start Time	0 10	11 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 71	Total	Average (Mean)	85th Percent
09/19/19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
05:00	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2	28	29
06:00	0	**1**	1	5	3	1	0	0	0	0	0	0	0	0	11	24	28
07:00	**1**	1	1	**6**	2	1	0	0	0	0	0	0	0	0	12	22	28
08:00	0	0	4	6	5	0	0	0	0	0	0	0	0	0	15	23	27
09:00	0	0	4	3	**7**	**3**	0	0	0	0	0	0	0	0	17	26	30
10:00	0	1	**8**	6	5	0	0	0	0	0	0	0	0	0	**20**	22	27
11:00	0	0	1	2	2	0	0	0	0	0	0	0	0	0	5	24	28
12 PM	0	0	3	5	3	1	0	0	0	0	0	0	0	0	12	24	28
13:00	**1**	0	1	5	1	0	0	0	0	0	0	0	0	0	8	21	24
14:00	0	0	2	**6**	3	1	0	0	0	0	0	0	0	0	12	24	28
15:00	0	0	2	6	**5**	**2**	0	0	0	0	0	0	0	0	**15**	25	29
16:00	0	0	**4**	6	4	1	0	0	0	0	0	0	0	0	15	24	28
17:00	0	0	1	1	1	1	0	0	0	0	0	0	0	0	4	25	32
18:00	0	**1**	1	4	1	1	0	0	0	0	0	0	0	0	8	23	28
19:00	0	1	2	0	2	0	0	0	0	0	0	0	0	0	5	21	28
20:00	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	28	29
21:00	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	18	19
22:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	13	14
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
Total	2	6	36	61	47	12	0	0	0	0	0	0	0	0	164		
Percent	1.2%	3.7%	22.0%	37.2%	28.7%	7.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	07:00	06:00	10:00	07:00	09:00	09:00									10:00		
Vol.	1	1	8	6	7	3									20		
PM Peak	13:00	18:00	16:00	14:00	15:00	15:00									15:00		
Vol.	1	1	4	6	5	2									15		
Total	2	6	36	61	47	12	0	0	0	0	0	0	0	0	164		
Percent	1.2%	3.7%	22.0%	37.2%	28.7%	7.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			

15th Percentile :	17 MPH
50th Percentile :	23 MPH
85th Percentile :	28 MPH
95th Percentile :	31 MPH

Statistics

10 MPH Pace Speed :	21-30 MPH
Number in Pace :	108
Percent in Pace :	65.9%
Number of Vehicles > 25 MPH :	59
Percent of Vehicles > 25 MPH :	36.0%
Mean Speed(Average) :	24 MPH

Field Data Services of Arizona
31894 Whitetail Ln.
Temecula, CA 92592
520.316.6745

Site Code: Thurs 09/19/19
Station ID: 19-1472-004
Saddle Rock Cir. north of June Bug Cir.
34.862087, -111.784590
Latitude: 0' 0.0000 Undefined

Southbound

Start Time	0 10	11 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 71	Total	Average (Mean)	85th Percent
09/19/19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
03:00	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	28	29
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
05:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
06:00	0	0	1	0	1	0	0	0	0	0	0	0	0	0	2	23	28
07:00	0	0	3	3	2	0	0	0	0	0	0	0	0	0	8	22	27
08:00	0	0	**8**	8	**8**	0	0	0	0	0	0	0	0	0	**24**	23	27
09:00	0	1	3	2	3	0	0	0	0	0	0	0	0	0	9	22	27
10:00	0	1	4	4	1	0	0	0	0	0	0	0	0	0	10	20	24
11:00	0	**2**	3	**11**	5	**1**	0	0	0	0	0	0	0	0	22	23	27
12 PM	0	0	2	11	4	**1**	0	0	0	0	0	0	0	0	18	24	27
13:00	0	0	1	**12**	4	0	0	0	0	0	0	0	0	0	17	24	26
14:00	0	**1**	4	6	5	1	0	0	0	0	0	0	0	0	17	23	28
15:00	0	1	2	10	0	0	0	0	0	0	0	0	0	0	13	21	24
16:00	0	1	3	8	**7**	0	0	0	0	0	0	0	0	0	**19**	24	27
17:00	0	0	4	7	5	1	0	0	0	0	0	0	0	0	17	24	28
18:00	0	1	**5**	4	1	0	**1**	0	0	0	0	0	0	0	12	22	25
19:00	0	0	2	10	2	0	0	0	0	0	0	0	0	0	14	23	24
20:00	0	0	0	2	0	1	0	0	0	0	0	0	0	0	3	26	32
21:00	0	1	0	2	1	0	0	0	0	0	0	0	0	0	4	22	27
22:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	13	14
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
Total	0	10	45	100	50	5	1	0	0	0	0	0	0	0	211		
Percent	0.0%	4.7%	21.3%	47.4%	23.7%	2.4%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak		11:00	08:00	11:00	08:00	11:00									08:00		
Vol.		2	8	11	8	1									24		
PM Peak		14:00	18:00	13:00	16:00	12:00	18:00								16:00		
Vol.		1	5	12	7	1	1								19		
Total	0	10	45	100	50	5	1	0	0	0	0	0	0	0	211		
Percent	0.0%	4.7%	21.3%	47.4%	23.7%	2.4%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			

15th Percentile :	17 MPH
50th Percentile :	22 MPH
85th Percentile :	27 MPH
95th Percentile :	29 MPH

Statistics

10 MPH Pace Speed :	21-30 MPH
Number in Pace :	150
Percent in Pace :	71.1%
Number of Vehicles > 25 MPH :	56
Percent of Vehicles > 25 MPH :	26.5%
Mean Speed(Average) :	23 MPH

Field Data Services of Arizona
31894 Whitetail Ln.
Temecula, CA 92592
520.316.6745

Site Code: Thurs 09/19/19
Station ID: 19-1472-004
Saddle Rock Cir. north of June Bug Cir.
34.862087, -111.784590
Latitude: 0' 0.0000 Undefined

Northbound, Southbound

Start Time	0 10	11 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 71	Total	Average (Mean)	85th Percent
09/19/19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
03:00	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	28	29
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
05:00	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2	28	29
06:00	0	1	2	5	4	1	0	0	0	0	0	0	0	0	13	24	28
07:00	**1**	1	4	9	4	1	0	0	0	0	0	0	0	0	20	22	27
08:00	0	0	**12**	**14**	**13**	0	0	0	0	0	0	0	0	0	**39**	23	27
09:00	0	1	7	5	10	**3**	0	0	0	0	0	0	0	0	26	24	29
10:00	0	**2**	12	10	6	0	0	0	0	0	0	0	0	0	30	21	26
11:00	0	2	4	13	7	1	0	0	0	0	0	0	0	0	27	23	27
12 PM	0	0	5	16	7	**2**	0	0	0	0	0	0	0	0	30	24	28
13:00	**1**	0	2	**17**	5	0	0	0	0	0	0	0	0	0	25	23	26
14:00	0	1	6	12	8	2	0	0	0	0	0	0	0	0	29	24	28
15:00	0	1	4	16	5	2	0	0	0	0	0	0	0	0	28	24	27
16:00	0	1	**7**	14	**11**	1	0	0	0	0	0	0	0	0	**34**	24	28
17:00	0	0	5	8	6	2	0	0	0	0	0	0	0	0	21	24	29
18:00	0	**2**	6	8	2	1	**1**	0	0	0	0	0	0	0	20	22	27
19:00	0	1	4	10	4	0	0	0	0	0	0	0	0	0	19	22	26
20:00	0	0	0	2	1	1	0	0	0	0	0	0	0	0	4	27	32
21:00	0	1	1	2	1	0	0	0	0	0	0	0	0	0	5	21	26
22:00	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2	13	14
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
Total	2	16	81	161	97	17	1	0	0	0	0	0	0	0	375		
Percent	0.5%	4.3%	21.6%	42.9%	25.9%	4.5%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	07:00	10:00	08:00	08:00	08:00	09:00									08:00		
Vol.	1	2	12	14	13	3									39		
PM Peak	13:00	18:00	16:00	13:00	16:00	12:00	18:00								16:00		
Vol.	1	2	7	17	11	2	1								34		
Total	2	16	81	161	97	17	1	0	0	0	0	0	0	0	375		
Percent	0.5%	4.3%	21.6%	42.9%	25.9%	4.5%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			

15th Percentile :	17 MPH
50th Percentile :	22 MPH
85th Percentile :	28 MPH
95th Percentile :	29 MPH

Statistics

10 MPH Pace Speed :	21-30 MPH
Number in Pace :	258
Percent in Pace :	68.8%
Number of Vehicles > 25 MPH :	115
Percent of Vehicles > 25 MPH :	30.7%
Mean Speed(Average) :	23 MPH

SADDLE ROCK CROSSING
SOLDIERS PASS ROAD/STATE ROUTE 89A
TRAFFIC IMPACT ANALYSIS

APPENDIX

Trip Generation Calculations

Multifamily Housing (Low Rise)

LAND USE: 40 Dwelling Units Multifamily Housing (Low Rise)

TRIP GENERATION CALCULATIONS ARE BASED ON THE INSTITUTE OF TRANSPORTATION ENGINEERS' TRIP GENERATION, 10TH EDITION. THE ITE LAND USE CODE IS Multifamily Housing (Low Rise) (220), General Urban/Suburban

Weekday

Fitted Curve T=7.56(X) - 40.86
Where X = 40 Units

	T =	**262 VTPD**
ENTER:	(0.5)*(262) =	**131 VTPD**
EXIT:	(0.5)*(262) =	**131 VTPD**

AM PEAK HOUR (ONE HOUR BETWEEN 7 AND 9 AM)

Fitted Curve Ln(T) = 0.95Ln(X) - 0.51
Where X = 40 Units

	T =	**20 VPH**
ENTER:	(0.23)*(20) =	**5 VPH**
EXIT:	(0.77)*(20) =	**15 VPH**

PM PEAK HOUR (ONE HOUR BETWEEN 4 AND 6 PM)

Fitted Curve Ln(T) = 0.89Ln(X) - 0.02
Where X = 40 Units

	T =	**26 VPH**
ENTER:	(0.63)*(26) =	**16 VPH**
EXIT:	(0.37)*(26) =	**10 VPH**

*where, T = trip ends

TRIP GENERATION SUMMARY

WEEKDAY	**262 VTPD**
AM PEAK HOUR (ONE HOUR BETWEEN 7 AND 9 AM)	**20 VPH**
PM PEAK HOUR (ONE HOUR BETWEEN 4 AND 6 PM)	**26 VPH**

Hotel

LAND USE: 114-Room Hotel

TRIP GENERATION CALCULATIONS ARE BASED ON THE INSTITUTE OF TRANSPORTATION ENGINEERS' TRIP GENERATION, 10TH EDITION. THE ITE LAND USE CODE IS Hotel (310), General Urban/Suburban

Weekday

Fitted Curve T=11.29(X) - 426.97
Where X = 114 Rooms

		T =	**862 VTPD**
ENTER:	(0.5)*(862) =		**431 VTPD**
EXIT:	(0.5)*(862) =		**431 VTPD**

AM PEAK HOUR (ONE HOUR BETWEEN 7 AND 9 AM)

Fitted Curve T=0.50(X) - 5.34
Where X = 114 Rooms

		T =	**52 VPH**
ENTER:	(0.59)*(52) =		**31 VPH**
EXIT:	(0.41)*(52) =		**21 VPH**

PM PEAK HOUR (ONE HOUR BETWEEN 4 AND 6 PM)

Fitted Curve T=0.75(X) - 26.02
Where X = 114 Rooms

		T =	**60 VPH**
ENTER:	(0.51)*(60) =		**31 VPH**
EXIT:	(0.49)*(60) =		**29 VPH**

*where, T = trip ends

TRIP GENERATION SUMMARY

WEEKDAY	**862 VTPD**
AM PEAK HOUR (ONE HOUR BETWEEN 7 AND 9 AM)	**52 VPH**
PM PEAK HOUR (ONE HOUR BETWEEN 4 AND 6 PM)	**60 VPH**

All Suite Hotel

LAND USE: 8 Rooms All Suite Hotel

TRIP GENERATION CALCULATIONS ARE BASED ON THE INSTITUTE OF TRANSPORTATION ENGINEERS' TRIP GENERATION, 10TH EDITION. THE ITE LAND USE CODE IS
All Suite Hotel (311)

WEEKDAY

Average Rate = 4.46 Trips per Room (R)

T = 4.46 Trips x 8 R

T = 36 VTPD

ENTER: (0.5)*(36) = **18 VTPD**

EXIT: (0.5)*(36) = **18 VTPD**

AM PEAK HOUR (ONE HOUR BETWEEN 7 AND 9 AM)

Average Rate = 0.34 Trips per Room (R)

T = 0.34 Trips x 8 R

T = 3 VPH

ENTER: (0.53)*(3) = **2 VPH**

EXIT: (0.47)*(3) = **1 VPH**

PM PEAK HOUR (ONE HOUR BETWEEN 4 AND 6 PM)

Average Rate = 0.36 Trips per Room (R)

T = 0.36 Trips x 8 R

T = 3 VPH

ENTER: (0.48)*(3) = **1 VPH**

EXIT: (0.52)*(3) = **2 VPH**

*where, T = trip ends

TRIP GENERATION SUMMARY

WEEKDAY	**36 VTPD**
AM PEAK HOUR (ONE HOUR BETWEEN 7 AND 9 AM)	**3 VPH**
PM PEAK HOUR (ONE HOUR BETWEEN 4 AND 6 PM)	**3 VPH**

Drinking Place

LAND USE: 985 Square Feet Drinking Place

TRIP GENERATION CALCULATIONS ARE BASED ON THE INSTITUTE OF TRANSPORTATION ENGINEERS' TRIP GENERATION, 10TH EDITION. THE ITE LAND USE CODE IS Drinking Place (925)

WEEKDAY

Average Rate = 0 Trips per 1000 Square Feet (sqft)

T = 0 Trips x 985 sqft / 1000

T = 0 VTPD

ENTER: (0.5)*(0) = **0 VTPD**

EXIT: (0.5)*(0) = **0 VTPD**

AM PEAK HOUR (ONE HOUR BETWEEN 7 AND 9 AM)

Average Rate = 0 Trips per 1000 Square Feet (sqft)

T = 0 Trips x 985 sqft / 1000

T = 0 VPH

ENTER: (0.5)*(0) = **0 VPH**

EXIT: (0.5)*(0) = **0 VPH**

PM PEAK HOUR (ONE HOUR BETWEEN 4 AND 6 PM)

Average Rate = 11.36 Trips per 1000 Square Feet (sqft)

T = 11.36 Trips x 985 sqft / 1000

T = 12 VPH

ENTER: (0.66)*(12) = **8 VPH**

EXIT: (0.34)*(12) = **4 VPH**

*where, T = trip ends

TRIP GENERATION SUMMARY

WEEKDAY	**0 VTPD**
AM PEAK HOUR (ONE HOUR BETWEEN 7 AND 9 AM)	**0 VPH**
PM PEAK HOUR (ONE HOUR BETWEEN 4 AND 6 PM)	**12 VPH**

High-Turnover (Sit-Down) Restaurant

LAND USE: 3,000 Square Feet High-Turnover (Sit-Down) Restaurant

TRIP GENERATION CALCULATIONS ARE BASED ON THE INSTITUTE OF TRANSPORTATION ENGINEERS' TRIP GENERATION, 10TH EDITION. THE ITE LAND USE CODE IS High-Turnover (Sit-Down) Restaurant (932)

WEEKDAY

Average Rate = 112.18 Trips per 1000 Square Feet (sqft)

T = 112.18 Trips x 3000 sqft / 1000

T = 338 VTPD

ENTER: (0.5)*(338) = **169 VTPD**

EXIT: (0.5)*(338) = **169 VTPD**

AM PEAK HOUR (ONE HOUR BETWEEN 7 AND 9 AM)

Average Rate = 9.94 Trips per 1000 Square Feet (sqft)

T = 9.94 Trips x 3000 sqft / 1000

T = 30 VPH

ENTER: (0.55)*(30) = **17 VPH**

EXIT: (0.45)*(30) = **13 VPH**

PM PEAK HOUR (ONE HOUR BETWEEN 4 AND 6 PM)

Average Rate = 9.77 Trips per 1000 Square Feet (sqft)

T = 9.77 Trips x 3000 sqft / 1000

T = 30 VPH

ENTER: (0.62)*(30) = **19 VPH**

EXIT: (0.38)*(30) = **11 VPH**

*where, T = trip ends

TRIP GENERATION SUMMARY

WEEKDAY	**338 VTPD**
AM PEAK HOUR (ONE HOUR BETWEEN 7 AND 9 AM)	**30 VPH**
PM PEAK HOUR (ONE HOUR BETWEEN 4 AND 6 PM)	**30 VPH**

SADDLE ROCK CROSSING
SOLDIERS PASS ROAD/STATE ROUTE 89A
TRAFFIC IMPACT ANALYSIS

APPENDIX

Capacity Calculations

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	44	966	19	5	658	39	8	1	7	14	1	25
Future Vol, veh/h	44	966	19	5	658	39	8	1	7	14	1	25
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	100	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	49	1073	21	6	731	43	9	1	8	16	1	28

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	774	0	0	1094	0	0	1560	1968	547	1378	1935	366
Stage 1	-	-	-	-	-	-	1182	1182	-	743	743	-
Stage 2	-	-	-	-	-	-	378	786	-	635	1192	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	837	-	-	634	-	-	76	62	481	104	65	631
Stage 1	-	-	-	-	-	-	201	262	-	373	420	-
Stage 2	-	-	-	-	-	-	616	401	-	433	259	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	837	-	-	634	-	-	68	58	481	96	61	631
Mov Cap-2 Maneuver	-	-	-	-	-	-	68	58	-	96	61	-
Stage 1	-	-	-	-	-	-	189	247	-	351	416	-
Stage 2	-	-	-	-	-	-	582	397	-	399	244	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.1	45.2	28.4
HCM LOS			E	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	107	837	-	-	634	-	-	198
HCM Lane V/C Ratio	0.166	0.058	-	-	0.009	-	-	0.224
HCM Control Delay (s)	45.2	9.6	-	-	10.7	-	-	28.4
HCM Lane LOS	E	A	-	-	B	-	-	D
HCM 95th %tile Q(veh)	0.6	0.2	-	-	0	-	-	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	111	874	0	0	617	47	0	0	0	57	0	83
Future Volume (veh/h)	111	874	0	0	617	47	0	0	0	57	0	83
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	123	971	0	0	686	52	0	0	0	63	0	92
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	326	1564	0	253	991	75	117	774	0	854	0	656
Arrive On Green	0.07	0.44	0.00	0.00	0.30	0.30	0.00	0.00	0.00	0.41	0.00	0.41
Sat Flow, veh/h	1781	3647	0	1781	3348	254	1304	1870	0	1781	0	1585
Grp Volume(v), veh/h	123	971	0	0	364	374	0	0	0	63	0	92
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1825	1304	1870	0	1781	0	1585
Q Serve(g_s), s	2.7	13.0	0.0	0.0	11.2	11.2	0.0	0.0	0.0	1.3	0.0	2.2
Cycle Q Clear(g_c), s	2.7	13.0	0.0	0.0	11.2	11.2	0.0	0.0	0.0	1.3	0.0	2.2
Prop In Lane	1.00		0.00	1.00		0.14	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	326	1564	0	253	526	540	117	774	0	854	0	656
V/C Ratio(X)	0.38	0.62	0.00	0.00	0.69	0.69	0.00	0.00	0.00	0.07	0.00	0.14
Avail Cap(c_a), veh/h	503	2335	0	553	1168	1199	117	774	0	854	0	656
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.6	13.3	0.0	0.0	19.2	19.2	0.0	0.0	0.0	11.0	0.0	11.2
Incr Delay (d2), s/veh	0.7	0.4	0.0	0.0	1.6	1.6	0.0	0.0	0.0	0.2	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	4.6	0.0	0.0	4.4	4.6	0.0	0.0	0.0	0.5	0.0	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.4	13.7	0.0	0.0	20.9	20.8	0.0	0.0	0.0	11.1	0.0	11.7
LnGrp LOS	B	B	A	A	C	C	A	A	A	B	A	B
Approach Vol, veh/h		1094			738			0			155	
Approach Delay, s/veh		13.8			20.8			0.0			11.5	
Approach LOS		B			C						B	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		30.0	0.0	31.6		30.0	8.9	22.7				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		25.5	10.5	40.5		25.5	10.5	40.5				
Max Q Clear Time (g_c+I1), s		0.0	0.0	15.0		4.2	4.7	13.2				
Green Ext Time (p_c), s		0.0	0.0	7.8		0.6	0.1	5.0				

Intersection Summary												
HCM 6th Ctrl Delay			16.2									
HCM 6th LOS			B									

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	927	4	1	662	4	0
Future Vol, veh/h	927	4	1	662	4	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1030	4	1	736	4	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1034	0	1402	517
Stage 1	-	-	-	-	1032	-
Stage 2	-	-	-	-	370	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	668	-	131	503
Stage 1	-	-	-	-	304	-
Stage 2	-	-	-	-	669	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	668	-	131	503
Mov Cap-2 Maneuver	-	-	-	-	239	-
Stage 1	-	-	-	-	304	-
Stage 2	-	-	-	-	668	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	20.3
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	239	-	-	668	-
HCM Lane V/C Ratio	0.019	-	-	0.002	-
HCM Control Delay (s)	20.3	-	-	10.4	-
HCM Lane LOS	C	-	-	B	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	7.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	62	1046	16	3	1044	81	8	0	1	29	0	74
Future Vol, veh/h	62	1046	16	3	1044	81	8	0	1	29	0	74
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	100	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	69	1162	18	3	1160	90	9	0	1	32	0	82

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1250	0	0	1180	0	0	1895	2565	590	1885	2484	580
Stage 1	-	-	-	-	-	-	1309	1309	-	1166	1166	-
Stage 2	-	-	-	-	-	-	586	1256	-	719	1318	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	553	-	-	588	-	-	42	26	451	43	29	458
Stage 1	-	-	-	-	-	-	168	227	-	206	266	-
Stage 2	-	-	-	-	-	-	463	241	-	386	225	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	553	-	-	588	-	-	31	23	451	39	25	458
Mov Cap-2 Maneuver	-	-	-	-	-	-	31	23	-	39	25	-
Stage 1	-	-	-	-	-	-	147	199	-	180	265	-
Stage 2	-	-	-	-	-	-	378	240	-	337	197	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	0	144.8	156.9
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	35	553	-	-	588	-	-	114
HCM Lane V/C Ratio	0.286	0.125	-	-	0.006	-	-	1.004
HCM Control Delay (s)	144.8	12.4	-	-	11.2	-	-	156.9
HCM Lane LOS	F	B	-	-	B	-	-	F
HCM 95th %tile Q(veh)	0.9	0.4	-	-	0	-	-	6.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	71	985	0	0	1084	53	0	0	0	93	0	81
Future Volume (veh/h)	71	985	0	0	1084	53	0	0	0	93	0	81
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	79	1094	0	0	1204	59	0	0	0	103	0	90
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	246	1938	0	274	1492	73	95	628	0	693	0	533
Arrive On Green	0.05	0.55	0.00	0.00	0.43	0.43	0.00	0.00	0.00	0.34	0.00	0.34
Sat Flow, veh/h	1781	3647	0	1781	3448	169	1307	1870	0	1781	0	1585
Grp Volume(v), veh/h	79	1094	0	0	620	643	0	0	0	103	0	90
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1840	1307	1870	0	1781	0	1585
Q Serve(g_s), s	1.7	15.3	0.0	0.0	23.1	23.1	0.0	0.0	0.0	3.1	0.0	3.0
Cycle Q Clear(g_c), s	1.7	15.3	0.0	0.0	23.1	23.1	0.0	0.0	0.0	3.1	0.0	3.0
Prop In Lane	1.00		0.00	1.00		0.09	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	246	1938	0	274	769	796	95	628	0	693	0	533
V/C Ratio(X)	0.32	0.56	0.00	0.00	0.81	0.81	0.00	0.00	0.00	0.15	0.00	0.17
Avail Cap(c_a), veh/h	398	1938	0	518	948	982	95	628	0	693	0	533
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.5	11.3	0.0	0.0	18.8	18.8	0.0	0.0	0.0	17.8	0.0	17.7
Incr Delay (d2), s/veh	0.7	0.4	0.0	0.0	4.3	4.2	0.0	0.0	0.0	0.5	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	5.4	0.0	0.0	9.6	9.9	0.0	0.0	0.0	1.3	0.0	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.3	11.7	0.0	0.0	23.0	22.9	0.0	0.0	0.0	18.2	0.0	18.4
LnGrp LOS	B	B	A	A	C	C	A	A	A	B	A	B
Approach Vol, veh/h		1173			1263			0			193	
Approach Delay, s/veh		11.9			23.0			0.0			18.3	
Approach LOS		B			C						B	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		30.0	0.0	45.9		30.0	8.6	37.3				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		25.5	10.5	40.5		25.5	10.5	40.5				
Max Q Clear Time (g_c+I1), s		0.0	0.0	17.3		5.1	3.7	25.1				
Green Ext Time (p_c), s		0.0	0.0	8.7		0.7	0.1	7.7				

Intersection Summary	
HCM 6th Ctrl Delay	17.7
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1075	6	1	1134	9	0
Future Vol, veh/h	1075	6	1	1134	9	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1194	7	1	1260	10	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1201	0	1830	601
Stage 1	-	-	-	-	1198	-
Stage 2	-	-	-	-	632	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	577	-	68	443
Stage 1	-	-	-	-	249	-
Stage 2	-	-	-	-	492	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	577	-	68	443
Mov Cap-2 Maneuver	-	-	-	-	178	-
Stage 1	-	-	-	-	249	-
Stage 2	-	-	-	-	491	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	26.4
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	178	-	-	577	-
HCM Lane V/C Ratio	0.056	-	-	0.002	-
HCM Control Delay (s)	26.4	-	-	11.3	-
HCM Lane LOS	D	-	-	B	-
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	46	1005	20	6	685	41	9	2	8	15	2	26
Future Vol, veh/h	46	1005	20	6	685	41	9	2	8	15	2	26
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	100	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	90	90	80	90	80	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	58	1117	22	8	761	51	11	3	10	19	3	33

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	812	0	0	1139	0	0	1642	2072	570	1453	2032	381
Stage 1	-	-	-	-	-	-	1244	1244	-	777	777	-
Stage 2	-	-	-	-	-	-	398	828	-	676	1255	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	810	-	-	609	-	-	66	53	465	91	57	617
Stage 1	-	-	-	-	-	-	184	244	-	356	405	-
Stage 2	-	-	-	-	-	-	599	384	-	409	241	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	810	-	-	609	-	-	56	49	465	80	52	617
Mov Cap-2 Maneuver	-	-	-	-	-	-	56	49	-	80	52	-
Stage 1	-	-	-	-	-	-	171	226	-	330	400	-
Stage 2	-	-	-	-	-	-	556	379	-	367	224	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.1	61.2	38.5
HCM LOS			F	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	87	810	-	-	609	-	-	160
HCM Lane V/C Ratio	0.273	0.071	-	-	0.012	-	-	0.336
HCM Control Delay (s)	61.2	9.8	-	-	11	-	-	38.5
HCM Lane LOS	F	A	-	-	B	-	-	E
HCM 95th %tile Q(veh)	1	0.2	-	-	0	-	-	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	115	909	0	0	642	49	0	0	0	59	0	86
Future Volume (veh/h)	115	909	0	0	642	49	0	0	0	59	0	86
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	135	1010	0	0	713	54	0	0	0	74	0	101
Peak Hour Factor	0.85	0.90	0.90	0.80	0.90	0.90	0.80	0.80	0.80	0.80	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	329	1601	0	247	1018	77	115	760	0	838	0	644
Arrive On Green	0.07	0.45	0.00	0.00	0.30	0.30	0.00	0.00	0.00	0.41	0.00	0.41
Sat Flow, veh/h	1781	3647	0	1781	3348	253	1294	1870	0	1781	0	1585
Grp Volume(v), veh/h	135	1010	0	0	378	389	0	0	0	74	0	101
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1825	1294	1870	0	1781	0	1585
Q Serve(g_s), s	3.0	13.7	0.0	0.0	11.8	11.8	0.0	0.0	0.0	1.6	0.0	2.5
Cycle Q Clear(g_c), s	3.0	13.7	0.0	0.0	11.8	11.8	0.0	0.0	0.0	1.6	0.0	2.5
Prop In Lane	1.00		0.00	1.00		0.14	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	329	1601	0	247	540	555	115	760	0	838	0	644
V/C Ratio(X)	0.41	0.63	0.00	0.00	0.70	0.70	0.00	0.00	0.00	0.09	0.00	0.16
Avail Cap(c_a), veh/h	494	2293	0	542	1146	1177	115	760	0	838	0	644
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.7	13.2	0.0	0.0	19.3	19.3	0.0	0.0	0.0	11.5	0.0	11.8
Incr Delay (d2), s/veh	0.8	0.4	0.0	0.0	1.7	1.6	0.0	0.0	0.0	0.2	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	4.8	0.0	0.0	4.7	4.8	0.0	0.0	0.0	0.6	0.0	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.5	13.7	0.0	0.0	21.0	20.9	0.0	0.0	0.0	11.8	0.0	12.3
LnGrp LOS	B	B	A	A	C	C	A	A	A	B	A	B
Approach Vol, veh/h		1145			767			0			175	
Approach Delay, s/veh		13.8			21.0			0.0			12.1	
Approach LOS		B			C						B	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		30.0	0.0	32.8		30.0	9.2	23.6				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		25.5	10.5	40.5		25.5	10.5	40.5				
Max Q Clear Time (g_c+I1), s		0.0	0.0	15.7		4.5	5.0	13.8				
Green Ext Time (p_c), s		0.0	0.0	8.1		0.7	0.1	5.3				

Intersection Summary												
HCM 6th Ctrl Delay			16.3									
HCM 6th LOS			B									

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	964	5	2	689	5	1
Future Vol, veh/h	964	5	2	689	5	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	80	90	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1071	6	3	766	6	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1077	0	1463	539
Stage 1	-	-	-	-	1074	-
Stage 2	-	-	-	-	389	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	643	-	119	487
Stage 1	-	-	-	-	289	-
Stage 2	-	-	-	-	654	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	643	-	118	487
Mov Cap-2 Maneuver	-	-	-	-	226	-
Stage 1	-	-	-	-	289	-
Stage 2	-	-	-	-	651	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	20
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	248	-	-	643	-
HCM Lane V/C Ratio	0.03	-	-	0.004	-
HCM Control Delay (s)	20	-	-	10.6	-
HCM Lane LOS	C	-	-	B	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	17.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	65	1088	17	4	1086	84	9	1	2	30	1	77
Future Vol, veh/h	65	1088	17	4	1086	84	9	1	2	30	1	77
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	100	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	90	90	80	90	80	80	80	80	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	81	1209	19	5	1207	105	11	1	3	35	1	91

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1312	0	0	1228	0	0	1995	2703	614	1984	2607	604
Stage 1	-	-	-	-	-	-	1381	1381	-	1217	1217	-
Stage 2	-	-	-	-	-	-	614	1322	-	767	1390	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	523	-	-	563	-	-	36	21	435	36	24	441
Stage 1	-	-	-	-	-	-	152	210	-	192	252	-
Stage 2	-	-	-	-	-	-	446	224	-	361	208	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	523	-	-	563	-	-	24	18	435	~ 30	20	441
Mov Cap-2 Maneuver	-	-	-	-	-	-	24	18	-	~ 30	20	-
Stage 1	-	-	-	-	-	-	128	177	-	162	250	-
Stage 2	-	-	-	-	-	-	350	222	-	301	176	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	0	233.8	$ 337
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	28	523	-	-	563	-	-	88
HCM Lane V/C Ratio	0.536	0.155	-	-	0.009	-	-	1.444
HCM Control Delay (s)	233.8	13.1	-	-	11.5	-	-	$ 337
HCM Lane LOS	F	B	-	-	B	-	-	F
HCM 95th %tile Q(veh)	1.7	0.5	-	-	0	-	-	9.8

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	74	1025	0	0	1128	55	0	0	0	97	0	84
Future Volume (veh/h)	74	1025	0	0	1128	55	0	0	0	97	0	84
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	87	1139	0	0	1253	61	0	0	0	114	0	99
Peak Hour Factor	0.85	0.90	0.90	0.80	0.90	0.90	0.80	0.80	0.80	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	242	1971	0	265	1524	74	93	616	0	679	0	522
Arrive On Green	0.05	0.55	0.00	0.00	0.44	0.44	0.00	0.00	0.00	0.33	0.00	0.33
Sat Flow, veh/h	1781	3647	0	1781	3449	168	1296	1870	0	1781	0	1585
Grp Volume(v), veh/h	87	1139	0	0	645	669	0	0	0	114	0	99
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1840	1296	1870	0	1781	0	1585
Q Serve(g_s), s	1.9	16.3	0.0	0.0	24.6	24.7	0.0	0.0	0.0	3.6	0.0	3.5
Cycle Q Clear(g_c), s	1.9	16.3	0.0	0.0	24.6	24.7	0.0	0.0	0.0	3.6	0.0	3.5
Prop In Lane	1.00		0.00	1.00		0.09	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	242	1971	0	265	785	813	93	616	0	679	0	522
V/C Ratio(X)	0.36	0.58	0.00	0.00	0.82	0.82	0.00	0.00	0.00	0.17	0.00	0.19
Avail Cap(c_a), veh/h	386	1971	0	505	929	962	93	616	0	679	0	522
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.1	11.3	0.0	0.0	18.9	19.0	0.0	0.0	0.0	18.6	0.0	18.6
Incr Delay (d2), s/veh	0.9	0.4	0.0	0.0	5.1	5.1	0.0	0.0	0.0	0.5	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	5.7	0.0	0.0	10.4	10.8	0.0	0.0	0.0	1.5	0.0	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.0	11.7	0.0	0.0	24.1	24.0	0.0	0.0	0.0	19.2	0.0	19.4
LnGrp LOS	B	B	A	A	C	C	A	A	A	B	A	B
Approach Vol, veh/h		1226			1314			0			213	
Approach Delay, s/veh		12.0			24.0			0.0			19.3	
Approach LOS		B			C						B	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		30.0	0.0	47.5		30.0	8.7	38.7				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		25.5	10.5	40.5		25.5	10.5	40.5				
Max Q Clear Time (g_c+I1), s		0.0	0.0	18.3		5.6	3.9	26.7				
Green Ext Time (p_c), s		0.0	0.0	9.0		0.8	0.1	7.5				

Intersection Summary	
HCM 6th Ctrl Delay	18.3
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1118	7	2	1180	10	1
Future Vol, veh/h	1118	7	2	1180	10	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	80	90	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1242	8	3	1311	13	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1250	0	1908	625
Stage 1	-	-	-	-	1246	-
Stage 2	-	-	-	-	662	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	553	-	60	428
Stage 1	-	-	-	-	234	-
Stage 2	-	-	-	-	475	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	553	-	60	428
Mov Cap-2 Maneuver	-	-	-	-	167	-
Stage 1	-	-	-	-	234	-
Stage 2	-	-	-	-	473	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	27
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	177	-	-	553	-
HCM Lane V/C Ratio	0.078	-	-	0.005	-
HCM Control Delay (s)	27	-	-	11.5	-
HCM Lane LOS	D	-	-	B	-
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	49	1067	21	7	726	43	10	3	9	16	3	28
Future Vol, veh/h	49	1067	21	7	726	43	10	3	9	16	3	28
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	100	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	90	90	80	90	80	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	61	1186	23	9	807	54	13	4	11	20	4	35

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	861	0	0	1209	0	0	1744	2199	605	1542	2156	404
Stage 1	-	-	-	-	-	-	1320	1320	-	825	825	-
Stage 2	-	-	-	-	-	-	424	879	-	717	1331	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	776	-	-	573	-	-	55	44	441	78	47	596
Stage 1	-	-	-	-	-	-	166	225	-	333	385	-
Stage 2	-	-	-	-	-	-	578	363	-	387	222	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	776	-	-	573	-	-	45	40	441	66	43	596
Mov Cap-2 Maneuver	-	-	-	-	-	-	45	40	-	66	43	-
Stage 1	-	-	-	-	-	-	153	207	-	307	379	-
Stage 2	-	-	-	-	-	-	530	357	-	341	204	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.1	88.2	53.1
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	69	776	-	-	573	-	-	131
HCM Lane V/C Ratio	0.399	0.079	-	-	0.015	-	-	0.448
HCM Control Delay (s)	88.2	10	-	-	11.4	-	-	53.1
HCM Lane LOS	F	B	-	-	B	-	-	F
HCM 95th %tile Q(veh)	1.5	0.3	-	-	0	-	-	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	123	965	0	0	681	52	0	0	0	63	0	92
Future Volume (veh/h)	123	965	0	0	681	52	0	0	0	63	0	92
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	145	1072	0	0	757	58	0	0	0	79	0	108
Peak Hour Factor	0.85	0.90	0.90	0.80	0.90	0.90	0.80	0.80	0.80	0.80	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	330	1654	0	238	1063	81	112	739	0	815	0	626
Arrive On Green	0.08	0.47	0.00	0.00	0.32	0.32	0.00	0.00	0.00	0.40	0.00	0.40
Sat Flow, veh/h	1781	3647	0	1781	3345	256	1286	1870	0	1781	0	1585
Grp Volume(v), veh/h	145	1072	0	0	402	413	0	0	0	79	0	108
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1824	1286	1870	0	1781	0	1585
Q Serve(g_s), s	3.3	14.9	0.0	0.0	12.9	12.9	0.0	0.0	0.0	1.8	0.0	2.9
Cycle Q Clear(g_c), s	3.3	14.9	0.0	0.0	12.9	12.9	0.0	0.0	0.0	1.8	0.0	2.9
Prop In Lane	1.00		0.00	1.00		0.14	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	330	1654	0	238	565	580	112	739	0	815	0	626
V/C Ratio(X)	0.44	0.65	0.00	0.00	0.71	0.71	0.00	0.00	0.00	0.10	0.00	0.17
Avail Cap(c_a), veh/h	481	2230	0	525	1115	1145	112	739	0	815	0	626
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.7	13.2	0.0	0.0	19.4	19.4	0.0	0.0	0.0	12.4	0.0	12.7
Incr Delay (d2), s/veh	0.9	0.4	0.0	0.0	1.7	1.6	0.0	0.0	0.0	0.2	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	5.2	0.0	0.0	5.1	5.3	0.0	0.0	0.0	0.7	0.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.7	13.6	0.0	0.0	21.1	21.1	0.0	0.0	0.0	12.6	0.0	13.3
LnGrp LOS	B	B	A	A	C	C	A	A	A	B	A	B
Approach Vol, veh/h		1217			815			0			187	
Approach Delay, s/veh		13.8			21.1			0.0			13.0	
Approach LOS		B			C						B	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		30.0	0.0	34.5		30.0	9.5	25.0				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		25.5	10.5	40.5		25.5	10.5	40.5				
Max Q Clear Time (g_c+I1), s		0.0	0.0	16.9		4.9	5.3	14.9				
Green Ext Time (p_c), s		0.0	0.0	8.5		0.8	0.2	5.6				

Intersection Summary	
HCM 6th Ctrl Delay	16.4
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1024	6	3	731	6	2
Future Vol, veh/h	1024	6	3	731	6	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	80	90	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1138	7	4	812	8	3

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1145	0	1556	573
Stage 1	-	-	-	-	1142	-
Stage 2	-	-	-	-	414	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	606	-	104	463
Stage 1	-	-	-	-	266	-
Stage 2	-	-	-	-	635	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	606	-	103	463
Mov Cap-2 Maneuver	-	-	-	-	208	-
Stage 1	-	-	-	-	266	-
Stage 2	-	-	-	-	631	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	20.6
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	241	-	-	606	-
HCM Lane V/C Ratio	0.041	-	-	0.006	-
HCM Control Delay (s)	20.6	-	-	11	-
HCM Lane LOS	C	-	-	B	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	34.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	68	1155	18	5	1153	89	10	2	3	32	2	82
Future Vol, veh/h	68	1155	18	5	1153	89	10	2	3	32	2	82
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	100	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	90	90	80	90	80	80	80	80	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	85	1283	20	6	1281	111	13	3	4	38	2	96

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1392	0	0	1303	0	0	2117	2867	652	2106	2766	641
Stage 1	-	-	-	-	-	-	1463	1463	-	1293	1293	-
Stage 2	-	-	-	-	-	-	654	1404	-	813	1473	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	487	-	-	527	-	-	29	16	411	~ 29	19	417
Stage 1	-	-	-	-	-	-	135	191	-	172	231	-
Stage 2	-	-	-	-	-	-	422	204	-	339	189	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	487	-	-	527	-	-	17	13	411	~ 21	16	417
Mov Cap-2 Maneuver	-	-	-	-	-	-	17	13	-	~ 21	16	-
Stage 1	-	-	-	-	-	-	111	158	-	142	228	-
Stage 2	-	-	-	-	-	-	317	202	-	273	156	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.9	0.1	$ 446.9	$ 677.5
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	20	487	-	-	527	-	-	63
HCM Lane V/C Ratio	0.938	0.175	-	-	0.012	-	-	2.166
HCM Control Delay (s)	$ 446.9	13.9	-	-	11.9	-	-	$ 677.5
HCM Lane LOS	F	B	-	-	B	-	-	F
HCM 95th %tile Q(veh)	2.6	0.6	-	-	0	-	-	13.1

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	78	1088	0	0	1197	59	0	0	0	103	0	89
Future Volume (veh/h)	78	1088	0	0	1197	59	0	0	0	103	0	89
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	92	1209	0	0	1330	66	0	0	0	121	0	105
Peak Hour Factor	0.85	0.90	0.90	0.80	0.90	0.90	0.80	0.80	0.80	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	231	2013	0	251	1569	78	90	599	0	661	0	508
Arrive On Green	0.05	0.57	0.00	0.00	0.46	0.46	0.00	0.00	0.00	0.32	0.00	0.32
Sat Flow, veh/h	1781	3647	0	1781	3446	171	1289	1870	0	1781	0	1585
Grp Volume(v), veh/h	92	1209	0	0	685	711	0	0	0	121	0	105
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1840	1289	1870	0	1781	0	1585
Q Serve(g_s), s	2.0	17.8	0.0	0.0	27.2	27.3	0.0	0.0	0.0	3.9	0.0	3.8
Cycle Q Clear(g_c), s	2.0	17.8	0.0	0.0	27.2	27.3	0.0	0.0	0.0	3.9	0.0	3.8
Prop In Lane	1.00		0.00	1.00		0.09	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	231	2013	0	251	809	838	90	599	0	661	0	508
V/C Ratio(X)	0.40	0.60	0.00	0.00	0.85	0.85	0.00	0.00	0.00	0.18	0.00	0.21
Avail Cap(c_a), veh/h	369	2013	0	484	904	936	90	599	0	661	0	508
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.2	11.3	0.0	0.0	19.2	19.2	0.0	0.0	0.0	19.7	0.0	19.7
Incr Delay (d2), s/veh	1.1	0.5	0.0	0.0	6.9	6.8	0.0	0.0	0.0	0.6	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	6.3	0.0	0.0	11.7	12.2	0.0	0.0	0.0	1.7	0.0	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.3	11.8	0.0	0.0	26.1	26.1	0.0	0.0	0.0	20.3	0.0	20.6
LnGrp LOS	B	B	A	A	C	C	A	A	A	C	A	C
Approach Vol, veh/h		1301			1396			0			226	
Approach Delay, s/veh		12.2			26.1			0.0			20.5	
Approach LOS		B			C						C	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		30.0	0.0	49.6		30.0	8.8	40.7				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		25.5	10.5	40.5		25.5	10.5	40.5				
Max Q Clear Time (g_c+I1), s		0.0	0.0	19.8		5.9	4.0	29.3				
Green Ext Time (p_c), s		0.0	0.0	9.3		0.9	0.1	6.9				

Intersection Summary	
HCM 6th Ctrl Delay	19.5
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1187	8	3	1252	11	2
Future Vol, veh/h	1187	8	3	1252	11	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	80	90	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1319	9	4	1391	14	3

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1328	0	2028	664
Stage 1	-	-	-	-	1324	-
Stage 2	-	-	-	-	704	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	516	-	50	403
Stage 1	-	-	-	-	213	-
Stage 2	-	-	-	-	452	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	516	-	50	403
Mov Cap-2 Maneuver	-	-	-	-	151	-
Stage 1	-	-	-	-	213	-
Stage 2	-	-	-	-	448	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	28.9
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	167	-	-	516	-
HCM Lane V/C Ratio	0.097	-	-	0.007	-
HCM Control Delay (s)	28.9	-	-	12	-
HCM Lane LOS	D	-	-	B	-
HCM 95th %tile Q(veh)	0.3	-	-	0	-

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	46	1032	23	6	710	41	12	2	8	15	2	26
Future Vol, veh/h	46	1032	23	6	710	41	12	2	8	15	2	26
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	100	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	90	90	80	90	80	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	58	1147	26	8	789	51	15	3	10	19	3	33

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	840	0	0	1173	0	0	1688	2132	587	1496	2094	395
Stage 1	-	-	-	-	-	-	1276	1276	-	805	805	-
Stage 2	-	-	-	-	-	-	412	856	-	691	1289	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	791	-	-	591	-	-	61	49	453	85	52	604
Stage 1	-	-	-	-	-	-	176	236	-	342	393	-
Stage 2	-	-	-	-	-	-	588	373	-	401	232	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	791	-	-	591	-	-	52	45	453	74	48	604
Mov Cap-2 Maneuver	-	-	-	-	-	-	52	45	-	74	48	-
Stage 1	-	-	-	-	-	-	163	219	-	317	387	-
Stage 2	-	-	-	-	-	-	545	368	-	359	215	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.1	78.5	41.8
HCM LOS			F	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	75	791	-	-	591	-	-	150
HCM Lane V/C Ratio	0.367	0.073	-	-	0.013	-	-	0.358
HCM Control Delay (s)	78.5	9.9	-	-	11.2	-	-	41.8
HCM Lane LOS	F	A	-	-	B	-	-	E
HCM 95th %tile Q(veh)	1.4	0.2	-	-	0	-	-	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	115	909	27	25	642	49	25	0	22	59	0	86
Future Volume (veh/h)	115	909	27	25	642	49	25	0	22	59	0	86
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	135	1010	30	31	713	54	31	0	28	74	0	101
Peak Hour Factor	0.85	0.90	0.90	0.80	0.90	0.90	0.80	0.80	0.80	0.80	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	355	1357	40	241	1155	87	545	0	603	618	0	603
Arrive On Green	0.07	0.39	0.39	0.03	0.34	0.34	0.38	0.00	0.38	0.38	0.00	0.38
Sat Flow, veh/h	1781	3524	105	1781	3348	253	1294	0	1585	1382	0	1585
Grp Volume(v), veh/h	135	509	531	31	378	389	31	0	28	74	0	101
Grp Sat Flow(s),veh/h/ln	1781	1777	1852	1781	1777	1825	1294	0	1585	1382	0	1585
Q Serve(g_s), s	3.2	16.6	16.6	0.7	11.9	11.9	1.1	0.0	0.7	2.4	0.0	2.8
Cycle Q Clear(g_c), s	3.2	16.6	16.6	0.7	11.9	11.9	3.9	0.0	0.7	3.1	0.0	2.8
Prop In Lane	1.00		0.06	1.00		0.14	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	355	685	713	241	613	629	545	0	603	618	0	603
V/C Ratio(X)	0.38	0.74	0.74	0.13	0.62	0.62	0.06	0.00	0.05	0.12	0.00	0.17
Avail Cap(c_a), veh/h	504	1074	1119	462	1074	1103	545	0	603	618	0	603
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.5	17.7	17.7	14.7	18.3	18.3	15.0	0.0	13.1	14.1	0.0	13.7
Incr Delay (d2), s/veh	0.7	1.6	1.6	0.2	1.0	1.0	0.2	0.0	0.1	0.4	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	6.4	6.7	0.3	4.6	4.8	0.3	0.0	0.3	0.8	0.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.2	19.4	19.3	15.0	19.3	19.3	15.2	0.0	13.2	14.5	0.0	14.3
LnGrp LOS	B	B	B	B	B	B	B	A	B	B	A	B
Approach Vol, veh/h		1175			798			59			175	
Approach Delay, s/veh		18.8			19.1			14.3			14.4	
Approach LOS		B			B			B			B	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		30.0	6.7	30.3		30.0	9.4	27.6				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		25.5	10.5	40.5		25.5	10.5	40.5				
Max Q Clear Time (g_c+I1), s		5.9	2.7	18.6		5.1	5.2	13.9				
Green Ext Time (p_c), s		0.2	0.0	7.3		0.7	0.1	5.3				

Intersection Summary	
HCM 6th Ctrl Delay	18.4
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	986	5	2	714	5	1
Future Vol, veh/h	986	5	2	714	5	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	80	90	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1096	6	3	793	6	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1102	0	1502	551
Stage 1	-	-	-	-	1099	-
Stage 2	-	-	-	-	403	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	629	-	112	478
Stage 1	-	-	-	-	281	-
Stage 2	-	-	-	-	644	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	629	-	111	478
Mov Cap-2 Maneuver	-	-	-	-	219	-
Stage 1	-	-	-	-	281	-
Stage 2	-	-	-	-	641	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	20.4
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	241	-	-	629	-
HCM Lane V/C Ratio	0.031	-	-	0.004	-
HCM Control Delay (s)	20.4	-	-	10.7	-
HCM Lane LOS	C	-	-	B	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	0.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	3	19	0	3	28
Future Vol, veh/h	0	3	19	0	3	28
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	4	24	0	4	35

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	67	24	0	0	24	0
Stage 1	24	-	-	-	-	-
Stage 2	43	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	938	1052	-	-	1591	-
Stage 1	999	-	-	-	-	-
Stage 2	979	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	935	1052	-	-	1591	-
Mov Cap-2 Maneuver	935	-	-	-	-	-
Stage 1	999	-	-	-	-	-
Stage 2	976	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.4	0	0.7
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1052	1591	-
HCM Lane V/C Ratio	-	-	0.004	0.002	-
HCM Control Delay (s)	-	-	8.4	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	20.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	65	1125	21	4	1114	84	12	1	2	30	1	77
Future Vol, veh/h	65	1125	21	4	1114	84	12	1	2	30	1	77
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	100	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	90	90	80	90	80	80	80	80	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	81	1250	23	5	1238	105	15	1	3	35	1	91

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1343	0	0	1273	0	0	2054	2777	637	2036	2683	619
Stage 1	-	-	-	-	-	-	1424	1424	-	1248	1248	-
Stage 2	-	-	-	-	-	-	630	1353	-	788	1435	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	509	-	-	541	-	-	32	19	420	~ 33	22	432
Stage 1	-	-	-	-	-	-	143	200	-	183	243	-
Stage 2	-	-	-	-	-	-	436	216	-	350	197	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	509	-	-	541	-	-	21	16	420	~ 27	18	432
Mov Cap-2 Maneuver	-	-	-	-	-	-	21	16	-	~ 27	18	-
Stage 1	-	-	-	-	-	-	120	168	-	154	241	-
Stage 2	-	-	-	-	-	-	340	214	-	290	166	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	0	$ 363.2	$ 405.2
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	23	509	-	-	541	-	-	80
HCM Lane V/C Ratio	0.815	0.16	-	-	0.009	-	-	1.588
HCM Control Delay (s)	$ 363.2	13.4	-	-	11.7	-	-	$ 405.2
HCM Lane LOS	F	B	-	-	B	-	-	F
HCM 95th %tile Q(veh)	2.4	0.6	-	-	0	-	-	10.4

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	74	1025	37	34	1128	55	28	0	25	97	0	84
Future Volume (veh/h)	74	1025	37	34	1128	55	28	0	25	97	0	84
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	87	1139	41	42	1253	61	35	0	31	114	0	99
Peak Hour Factor	0.85	0.90	0.90	0.80	0.90	0.90	0.80	0.80	0.80	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	242	1603	58	255	1524	74	462	0	522	528	0	522
Arrive On Green	0.05	0.46	0.46	0.04	0.44	0.44	0.33	0.00	0.33	0.33	0.00	0.33
Sat Flow, veh/h	1781	3499	126	1781	3449	168	1296	0	1585	1378	0	1585
Grp Volume(v), veh/h	87	578	602	42	645	669	35	0	31	114	0	99
Grp Sat Flow(s),veh/h/ln	1781	1777	1848	1781	1777	1840	1296	0	1585	1378	0	1585
Q Serve(g_s), s	2.0	20.3	20.3	1.0	24.6	24.7	1.5	0.0	1.0	4.8	0.0	3.5
Cycle Q Clear(g_c), s	2.0	20.3	20.3	1.0	24.6	24.7	5.0	0.0	1.0	5.8	0.0	3.5
Prop In Lane	1.00		0.07	1.00		0.09	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	242	814	847	255	785	813	462	0	522	528	0	522
V/C Ratio(X)	0.36	0.71	0.71	0.16	0.82	0.82	0.08	0.00	0.06	0.22	0.00	0.19
Avail Cap(c_a), veh/h	386	929	966	428	929	962	462	0	522	528	0	522
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.3	16.9	16.9	13.3	18.9	19.0	20.4	0.0	17.8	19.8	0.0	18.6
Incr Delay (d2), s/veh	0.9	2.2	2.1	0.3	5.1	5.1	0.3	0.0	0.2	0.9	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	8.0	8.3	0.4	10.4	10.8	0.5	0.0	0.4	1.6	0.0	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.2	19.0	19.0	13.6	24.1	24.0	20.7	0.0	18.0	20.7	0.0	19.4
LnGrp LOS	B	B	B	B	C	C	C	A	B	C	A	B
Approach Vol, veh/h		1267			1356			66			213	
Approach Delay, s/veh		18.8			23.7			19.4			20.1	
Approach LOS		B			C			B			C	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	30.0	7.5	40.0	30.0	8.7	38.7
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	25.5	10.5	40.5	25.5	10.5	40.5
Max Q Clear Time (g_c+I1), s	7.0	3.0	22.3	7.8	4.0	26.7
Green Ext Time (p_c), s	0.2	0.0	7.8	0.8	0.1	7.5

Intersection Summary	
HCM 6th Ctrl Delay	21.2
HCM 6th LOS	C

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1143	7	2	1214	10	1
Future Vol, veh/h	1143	7	2	1214	10	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	80	90	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1270	8	3	1349	13	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1278	0	1955	639
Stage 1	-	-	-	-	1274	-
Stage 2	-	-	-	-	681	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	539	-	56	419
Stage 1	-	-	-	-	226	-
Stage 2	-	-	-	-	464	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	539	-	56	419
Mov Cap-2 Maneuver	-	-	-	-	160	-
Stage 1	-	-	-	-	226	-
Stage 2	-	-	-	-	461	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	28
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	170	-	-	539	-
HCM Lane V/C Ratio	0.081	-	-	0.005	-
HCM Control Delay (s)	28	-	-	11.7	-
HCM Lane LOS	D	-	-	B	-
HCM 95th %tile Q(veh)	0.3	-	-	0	-

Intersection	
Int Delay, s/veh	1.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	3	12	0	4	22
Future Vol, veh/h	0	3	12	0	4	22
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	4	15	0	5	28

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	53	15	0	0	15	0
Stage 1	15	-	-	-	-	-
Stage 2	38	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	955	1065	-	-	1603	-
Stage 1	1008	-	-	-	-	-
Stage 2	984	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	952	1065	-	-	1603	-
Mov Cap-2 Maneuver	952	-	-	-	-	-
Stage 1	1008	-	-	-	-	-
Stage 2	981	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.4	0	1.1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1065	1603	-
HCM Lane V/C Ratio	-	-	0.004	0.003	-
HCM Control Delay (s)	-	-	8.4	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	3.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	49	1094	24	7	751	43	13	3	9	16	3	28
Future Vol, veh/h	49	1094	24	7	751	43	13	3	9	16	3	28
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	100	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	90	90	80	90	80	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	61	1216	27	9	834	54	16	4	11	20	4	35

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	888	0	0	1243	0	0	1789	2258	622	1584	2217	417
Stage 1	-	-	-	-	-	-	1352	1352	-	852	852	-
Stage 2	-	-	-	-	-	-	437	906	-	732	1365	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	758	-	-	556	-	-	51	41	430	73	43	585
Stage 1	-	-	-	-	-	-	158	217	-	321	374	-
Stage 2	-	-	-	-	-	-	568	353	-	379	214	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	758	-	-	556	-	-	41	37	430	61	39	585
Mov Cap-2 Maneuver	-	-	-	-	-	-	41	37	-	61	39	-
Stage 1	-	-	-	-	-	-	145	200	-	295	368	-
Stage 2	-	-	-	-	-	-	520	347	-	333	197	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.1	117.5	60.1
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	60	758	-	-	556	-	-	121
HCM Lane V/C Ratio	0.521	0.081	-	-	0.016	-	-	0.486
HCM Control Delay (s)	117.5	10.2	-	-	11.6	-	-	60.1
HCM Lane LOS	F	B	-	-	B	-	-	F
HCM 95th %tile Q(veh)	2.1	0.3	-	-	0	-	-	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	123	965	27	25	681	52	25	0	22	63	0	92
Future Volume (veh/h)	123	965	27	25	681	52	25	0	22	63	0	92
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	145	1072	30	31	757	58	31	0	28	79	0	108
Peak Hour Factor	0.85	0.90	0.90	0.80	0.90	0.90	0.80	0.80	0.80	0.80	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	353	1415	40	234	1196	92	522	0	587	601	0	587
Arrive On Green	0.08	0.40	0.40	0.03	0.36	0.36	0.37	0.00	0.37	0.37	0.00	0.37
Sat Flow, veh/h	1781	3531	99	1781	3345	256	1286	0	1585	1382	0	1585
Grp Volume(v), veh/h	145	539	563	31	402	413	31	0	28	79	0	108
Grp Sat Flow(s),veh/h/ln	1781	1777	1853	1781	1777	1824	1286	0	1585	1382	0	1585
Q Serve(g_s), s	3.4	18.0	18.0	0.7	12.9	12.9	1.1	0.0	0.8	2.7	0.0	3.2
Cycle Q Clear(g_c), s	3.4	18.0	18.0	0.7	12.9	12.9	4.3	0.0	0.8	3.5	0.0	3.2
Prop In Lane	1.00		0.05	1.00		0.14	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	353	712	743	234	635	652	522	0	587	601	0	587
V/C Ratio(X)	0.41	0.76	0.76	0.13	0.63	0.63	0.06	0.00	0.05	0.13	0.00	0.18
Avail Cap(c_a), veh/h	490	1046	1090	448	1046	1074	522	0	587	601	0	587
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.4	17.7	17.7	14.8	18.4	18.4	16.1	0.0	13.9	15.0	0.0	14.6
Incr Delay (d2), s/veh	0.8	1.9	1.8	0.3	1.0	1.0	0.2	0.0	0.2	0.5	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	7.0	7.3	0.3	5.1	5.2	0.3	0.0	0.3	0.9	0.0	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.2	19.6	19.5	15.0	19.4	19.4	16.3	0.0	14.0	15.4	0.0	15.3
LnGrp LOS	B	B	B	B	B	B	B	A	B	B	A	B
Approach Vol, veh/h		1247			846			59			187	
Approach Delay, s/veh		18.9			19.2			15.2			15.4	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	30.0	6.7	32.1	30.0	9.7	29.1
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	25.5	10.5	40.5	25.5	10.5	40.5
Max Q Clear Time (g_c+I1), s	6.3	2.7	20.0	5.5	5.4	14.9
Green Ext Time (p_c), s	0.2	0.0	7.6	0.8	0.2	5.6

Intersection Summary	
HCM 6th Ctrl Delay	18.7
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1046	6	3	756	6	2
Future Vol, veh/h	1046	6	3	756	6	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	80	90	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1162	7	4	840	8	3

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1169	0	1594	585
Stage 1	-	-	-	-	1166	-
Stage 2	-	-	-	-	428	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	593	-	98	454
Stage 1	-	-	-	-	259	-
Stage 2	-	-	-	-	625	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	593	-	97	454
Mov Cap-2 Maneuver	-	-	-	-	201	-
Stage 1	-	-	-	-	259	-
Stage 2	-	-	-	-	621	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	21.1
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	234	-	-	593	-
HCM Lane V/C Ratio	0.043	-	-	0.006	-
HCM Control Delay (s)	21.1	-	-	11.1	-
HCM Lane LOS	C	-	-	B	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	0.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	3	22	0	3	31
Future Vol, veh/h	0	3	22	0	3	31
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	4	28	0	4	39

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	75	28	0	0	28	0
Stage 1	28	-	-	-	-	-
Stage 2	47	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	928	1047	-	-	1585	-
Stage 1	995	-	-	-	-	-
Stage 2	975	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	925	1047	-	-	1585	-
Mov Cap-2 Maneuver	925	-	-	-	-	-
Stage 1	995	-	-	-	-	-
Stage 2	972	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.5	0	0.6
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1047	1585	-
HCM Lane V/C Ratio	-	-	0.004	0.002	-
HCM Control Delay (s)	-	-	8.5	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	40.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	68	1192	22	5	1181	89	13	2	3	32	2	82
Future Vol, veh/h	68	1192	22	5	1181	89	13	2	3	32	2	82
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	100	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	90	90	80	90	80	80	80	80	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	85	1324	24	6	1312	111	16	3	4	38	2	96

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1423	0	0	1348	0	0	2175	2941	674	2158	2842	656
Stage 1	-	-	-	-	-	-	1506	1506	-	1324	1324	-
Stage 2	-	-	-	-	-	-	669	1435	-	834	1518	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	474	-	-	507	-	-	26	15	397	~ 27	17	408
Stage 1	-	-	-	-	-	-	127	182	-	165	224	-
Stage 2	-	-	-	-	-	-	413	197	-	329	180	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	474	-	-	507	-	-	~ 15	12	397	~ 19	14	408
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 15	12	-	~ 19	14	-
Stage 1	-	-	-	-	-	-	104	149	-	135	221	-
Stage 2	-	-	-	-	-	-	308	195	-	263	148	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	0.1	$ 652.1	$ 789.8
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	17	474	-	-	507	-	-	57
HCM Lane V/C Ratio	1.324	0.179	-	-	0.012	-	-	2.394
HCM Control Delay (s)	$ 652.1	14.2	-	-	12.2	-	-	$ 789.8
HCM Lane LOS	F	B	-	-	B	-	-	F
HCM 95th %tile Q(veh)	3.3	0.6	-	-	0	-	-	13.7

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	78	1092	37	34	1197	59	28	0	25	103	0	89
Future Volume (veh/h)	78	1092	37	34	1197	59	28	0	25	103	0	89
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	92	1213	41	42	1330	66	35	0	31	121	0	105
Peak Hour Factor	0.85	0.90	0.90	0.80	0.90	0.90	0.80	0.80	0.80	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	231	1655	56	243	1569	78	441	0	508	513	0	508
Arrive On Green	0.05	0.47	0.47	0.04	0.46	0.46	0.32	0.00	0.32	0.32	0.00	0.32
Sat Flow, veh/h	1781	3507	118	1781	3446	171	1289	0	1585	1378	0	1585
Grp Volume(v), veh/h	92	614	640	42	685	711	35	0	31	121	0	105
Grp Sat Flow(s),veh/h/ln	1781	1777	1849	1781	1777	1840	1289	0	1585	1378	0	1585
Q Serve(g_s), s	2.1	22.2	22.2	1.0	27.2	27.3	1.6	0.0	1.1	5.3	0.0	3.8
Cycle Q Clear(g_c), s	2.1	22.2	22.2	1.0	27.2	27.3	5.5	0.0	1.1	6.4	0.0	3.8
Prop In Lane	1.00		0.06	1.00		0.09	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	231	839	873	243	809	838	441	0	508	513	0	508
V/C Ratio(X)	0.40	0.73	0.73	0.17	0.85	0.85	0.08	0.00	0.06	0.24	0.00	0.21
Avail Cap(c_a), veh/h	369	904	941	411	904	936	441	0	508	513	0	508
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.2	17.0	17.0	13.5	19.2	19.2	21.7	0.0	18.7	21.0	0.0	19.7
Incr Delay (d2), s/veh	1.1	2.9	2.8	0.3	6.9	6.8	0.4	0.0	0.2	1.1	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	8.9	9.3	0.4	11.7	12.2	0.5	0.0	0.4	1.8	0.0	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.3	19.8	19.7	13.8	26.1	26.1	22.0	0.0	19.0	22.0	0.0	20.6
LnGrp LOS	B	B	B	B	C	C	C	A	B	C	A	C
Approach Vol, veh/h		1346			1438			66			226	
Approach Delay, s/veh		19.6			25.7			20.6			21.4	
Approach LOS		B			C			C			C	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		30.0	7.5	42.1		30.0	8.8	40.7				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		25.5	10.5	40.5		25.5	10.5	40.5				
Max Q Clear Time (g_c+I1), s		7.5	3.0	24.2		8.4	4.1	29.3				
Green Ext Time (p_c), s		0.2	0.0	7.9		0.8	0.1	6.9				

Intersection Summary												
HCM 6th Ctrl Delay			22.6									
HCM 6th LOS			C									

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1212	8	2	1286	11	2
Future Vol, veh/h	1212	8	2	1286	11	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	80	90	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1347	9	3	1429	14	3

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1356	0	2073	678
Stage 1	-	-	-	-	1352	-
Stage 2	-	-	-	-	721	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	503	-	46	395
Stage 1	-	-	-	-	206	-
Stage 2	-	-	-	-	443	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	503	-	46	395
Mov Cap-2 Maneuver	-	-	-	-	146	-
Stage 1	-	-	-	-	206	-
Stage 2	-	-	-	-	440	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	29.7
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	162	-	-	503	-
HCM Lane V/C Ratio	0.1	-	-	0.005	-
HCM Control Delay (s)	29.7	-	-	12.2	-
HCM Lane LOS	D	-	-	B	-
HCM 95th %tile Q(veh)	0.3	-	-	0	-

Intersection	
Int Delay, s/veh	1.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	3	15	0	4	25
Future Vol, veh/h	0	3	15	0	4	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	4	19	0	5	31

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	60	19	0	0	19	0
Stage 1	19	-	-	-	-	-
Stage 2	41	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	947	1059	-	-	1597	-
Stage 1	1004	-	-	-	-	-
Stage 2	981	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	944	1059	-	-	1597	-
Mov Cap-2 Maneuver	944	-	-	-	-	-
Stage 1	1004	-	-	-	-	-
Stage 2	978	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.4	0	1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1059	1597	-
HCM Lane V/C Ratio	-	-	0.004	0.003	-
HCM Control Delay (s)	-	-	8.4	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	49	1094	24	7	751	43	13	3	9	16	3	28
Future Volume (veh/h)	49	1094	24	7	751	43	13	3	9	16	3	28
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	61	1216	27	9	834	54	16	4	11	20	4	35
Peak Hour Factor	0.80	0.90	0.90	0.80	0.90	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	495	1946	43	332	1773	791	193	58	67	158	34	112
Arrive On Green	0.06	0.55	0.55	0.01	0.50	0.50	0.12	0.12	0.12	0.12	0.12	0.12
Sat Flow, veh/h	1781	3554	79	1781	3554	1585	528	488	559	359	284	938
Grp Volume(v), veh/h	61	608	635	9	834	54	31	0	0	59	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1856	1781	1777	1585	1576	0	0	1580	0	0
Q Serve(g_s), s	0.7	9.9	9.9	0.1	6.5	0.7	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.7	9.9	9.9	0.1	6.5	0.7	0.7	0.0	0.0	1.3	0.0	0.0
Prop In Lane	1.00		0.04	1.00		1.00	0.52		0.35	0.34		0.59
Lane Grp Cap(c), veh/h	495	973	1016	332	1773	791	318	0	0	303	0	0
V/C Ratio(X)	0.12	0.62	0.62	0.03	0.47	0.07	0.10	0.00	0.00	0.19	0.00	0.00
Avail Cap(c_a), veh/h	621	2094	2188	544	4189	1868	904	0	0	905	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	4.8	6.5	6.5	5.8	6.9	5.5	16.6	0.0	0.0	16.9	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.7	0.6	0.0	0.2	0.0	0.1	0.0	0.0	0.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	2.4	2.5	0.0	1.7	0.2	0.2	0.0	0.0	0.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	4.9	7.2	7.2	5.8	7.1	5.5	16.7	0.0	0.0	17.2	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	B	A	A	B	A	A
Approach Vol, veh/h		1304			897			31			59	
Approach Delay, s/veh		7.1			7.0			16.7			17.2	
Approach LOS		A			A			B			B	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		9.5	5.0	27.5		9.5	7.0	25.4				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		21.5	5.5	49.5		21.5	5.5	49.5				
Max Q Clear Time (g_c+I1), s		2.7	2.1	11.9		3.3	2.7	8.5				
Green Ext Time (p_c), s		0.1	0.0	11.1		0.2	0.0	7.3				

Intersection Summary												
HCM 6th Ctrl Delay			7.4									
HCM 6th LOS			A									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	68	1192	22	5	1181	89	13	2	3	32	2	82
Future Volume (veh/h)	68	1192	22	5	1181	89	13	2	3	32	2	82
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	85	1324	24	6	1312	111	16	2	4	38	2	96
Peak Hour Factor	0.80	0.90	0.90	0.80	0.90	0.80	0.80	0.80	0.80	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	363	2174	39	302	1953	871	254	38	39	128	19	144
Arrive On Green	0.07	0.61	0.61	0.01	0.55	0.55	0.13	0.13	0.13	0.13	0.13	0.13
Sat Flow, veh/h	1781	3571	65	1781	3554	1585	1057	291	300	317	144	1107
Grp Volume(v), veh/h	85	659	689	6	1312	111	22	0	0	136	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1859	1781	1777	1585	1648	0	0	1568	0	0
Q Serve(g_s), s	1.0	12.3	12.3	0.1	14.0	1.8	0.0	0.0	0.0	2.5	0.0	0.0
Cycle Q Clear(g_c), s	1.0	12.3	12.3	0.1	14.0	1.8	0.6	0.0	0.0	4.3	0.0	0.0
Prop In Lane	1.00		0.03	1.00		1.00	0.73		0.18	0.28		0.71
Lane Grp Cap(c), veh/h	363	1082	1132	302	1953	871	331	0	0	290	0	0
V/C Ratio(X)	0.23	0.61	0.61	0.02	0.67	0.13	0.07	0.00	0.00	0.47	0.00	0.00
Avail Cap(c_a), veh/h	494	1684	1761	472	3234	1443	683	0	0	681	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.5	6.5	6.5	6.0	8.6	5.8	20.4	0.0	0.0	22.0	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.6	0.5	0.0	0.4	0.1	0.1	0.0	0.0	1.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	3.2	3.3	0.0	4.1	0.5	0.2	0.0	0.0	1.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.8	7.0	7.0	6.1	9.0	5.9	20.5	0.0	0.0	23.2	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	C	A	A	C	A	A
Approach Vol, veh/h		1433			1429			22			136	
Approach Delay, s/veh		7.0			8.7			20.5			23.2	
Approach LOS		A			A			C			C	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		11.4	4.9	36.9		11.4	8.1	33.8				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		20.5	5.5	50.5		20.5	7.5	48.5				
Max Q Clear Time (g_c+I1), s		2.6	2.1	14.3		6.3	3.0	16.0				
Green Ext Time (p_c), s		0.0	0.0	12.5		0.6	0.1	13.2				

Intersection Summary												
HCM 6th Ctrl Delay			8.6									
HCM 6th LOS			A									

SADDLE ROCK CROSSING
SOLDIERS PASS ROAD/STATE ROUTE 89A
TRAFFIC IMPACT ANALYSIS

APPENDIX

Approved ADOT TIA Presubmittal Form

Exhibit 240-A. Traffic Impact Analysis Pre-Submittal Form

Project Name: Saddle Rock Crossing
Developer/Owner: Baney Corporation/Curt Baney
Phone Number: 541.382.2188
Email: curtb@oxfordsuites.com

Project Location
State Route (with nearest MP or Street): SR 89 (Soldiers Pass Road, MP 373)
Local Jurisdiction: Sedona

Stage of Development (choose one)

☐ Planning/Zoning ■ Development Plan

Brief Description of Project (land use, intensity, timeframe/phasing)

The project includes the construction of a 5,400 square foot high turnover restaurant, 100 room hotel, 20,000 square feet of specialty retail space, and 12 apartments on undeveloped land on the south side of the Soldiers Pass Road/SR 89a intersection in Sedona, Arizona.

Proposed Access (number, location, restrictions)

The site will be served by five (5) access points. One (1) access point will be located on SR 89 and will align with Soldiers Pass Road. Two (2) access points will be located on Saddle Rock Circle and two (2) will be located on Elk Road.

Preliminary Assumptions (provide as attachment)

- Trip Generation
- Study Horizon Years
- Trip Distribution
- Pass-By Or Internal Capture
- Future Roadway Network
- Study Area Intersections

Traffic Study Type (choose one)

☐ Transportation Planning Study
■ Traffic Impact Analysis
☐ Traffic Impact Statement

Traffic Study Preparer
Firm Name: Southwest Traffic Engineering, LLC
Contact: Andrew Smigielski PE, PTOE, PTP
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Pre-Submittal Forms are not required for each project but are a useful tool to reduce the number of submittals/reviews and aid development timeframes. When submitted, Regional Traffic Engineering staff will review and confirm the form in a timely manner. Changes to the above information should be provided in writing. A hard copy of an approved Pre-Submittal Form shall be included in the Study appendix.

Approval by: Robert LaJeunesse Date: 10-30-19